

No. 15640

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**United States**  
**Court of Appeals**  
for the Ninth Circuit

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*See Vol. 3049*

JOHN PHILLIP ZANNARAS, J. P. ROBIN-  
SON, JR., and U. S. TUNGSTEN CORPORA-  
TION,

Appellants,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Appellee.

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**Transcript of Record**  
In Two Volumes

Volume I  
(Pages 1 to 326)

**FILED**

DEC 3, 1957

**PAUL P. GIBBEN, CLERK**

**Appeal from the United States District Court for the  
District of Arizona**



No. 15640

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Court of Appeals**  
for the Ninth Circuit

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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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Phoenix, Arizona,  
Attorneys for Appellee.





In the District Court of the United States  
in and for the District of Arizona

No. Civil 221 Pret.

JOHN PHILLIP ZANNARAS and J. P. ROBIN-  
SON, JR.,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Defendant.

### COMPLAINT

Plaintiffs for cause of action against defendant  
allege:

#### I.

Plaintiffs are residents of and the cause of action herein sued upon arose in the State of Arizona; defendant, Bagdad Copper Corporation, is a corporation organized and existing under the laws of the State of Delaware authorized to and doing business in the State of Arizona.

#### II.

That heretofore on or about the 27th day of August, 1940, plaintiff, John Phillip Zannaras, applied to the Water Commissioner of the State of Arizona, Arizona State Land Commission, for the right to appropriate and use the water of Burro Creek, a tributary of the Williams River, for mining purposes, and thereafter said Water Commissioner granted and confirmed to said plaintiff the right to

appropriate and use water from Burro Creek in an amount actually beneficially used for mining purposes not exceeding three million gallons per annum with the priority for such use dating from August 27, 1940; that since said 27th day of August, 1940, said plaintiff has continuously used water from Burro Creek for mining purposes until approximately June 28, 1948, as hereinafter set forth.

### III.

That on or about November 5, 1941, defendant, a corporation, made application with the said Water Commissioner of the State of Arizona for a permit to appropriate public water for mining purposes from Boulder Creek, a tributary of Burro Creek, and from Burro Creek; thereafter on or about the 2nd day of January, 1942, the said Water Commissioner granted to defendant the right to appropriate and use waters from the said Boulder Creek, a tributary of Burro Creek, and from Burro Creek, in an amount not to exceed three hundred fifteen million gallons per annum with a priority dated from November 5, 1941; that defendant has installed electric driven centrifugal pumps for the diversion of water from the said Boulder Creek, a tributary of said Burro Creek, and from the said Burro Creek, and defendant is and has been diverting water from said sources, at points approximately seven miles above plaintiff's point of diversion; that beginning on or about the 28th day of June, 1948, defendant wrongfully and without regard to the rights of plaintiff diverted substan-

tially all of the water from the said Boulder Creek and Burro Creek, and since that time has failed, neglected and refused and does now fail, neglect and refuse to allow sufficient water to pass defendant's points of diversion as above so as to allow the amount of water appropriated by plaintiff, John Phillip Zannaras, as above set forth, to reach said plaintiffs' point of diversion of the water which said plaintiff has appropriated as above set forth, and for which he has prior rights under the laws of the State of Arizona.

#### IV.

That plaintiff, John Phillip Zannaras, is the owner of a mill on a millsite situated near the intersection of Bonanza Wash and Burro Creek, which mill is used by plaintiffs to work the ore from the Zannapolis claims as recorded in the office of the County Recorder of Yavapai County, Arizona; that plaintiff, J. P. Robinson, Jr., is a mining partner with the said John Phillip Zannaras in the mining of said claims and in the operation of said mill;

That said water so appropriated by the said Zannaras is necessary for the operation of said mill and said mill cannot be operated without said water; that plaintiffs are informed and believe that if defendant did not wrongfully divert and withhold water as aforesaid, plaintiffs would have sufficient water from Burro Creek to operate said mill.

That plaintiffs are informed and believe that as the result of the wrongful acts of defendant of

diverting and withholding waters as aforesaid, plaintiffs have been since the 28th day of June, 1948, to the date hereof and will in the future be damaged in the sum of Fifteen Hundred (\$1,500) Dollars per day for loss of profits.

That plaintiffs are informed and believe, and therefore, allege that there is no adequate or speedy remedy at law to compensate plaintiffs for the wrongful diversion and withholding of said water by defendant from plaintiffs, and that unless this Court should issue its Mandatory Injunction requiring defendant to release said water to plaintiffs and restraining and enjoining defendant from further diverting and using water rights that belong to plaintiff, that defendant will continue to so divert and use said water and deprive plaintiffs of plaintiffs' rights therein and thereto.

Wherefore plaintiffs pray that the Court make and enter its order requiring defendant to appear at a time and place certain and show cause if any it has why the court should not enter its order, enjoining and restraining defendant from the use of any water from Boulder Creek, a tributary of Burro Creek, or Burro Creek which will interfere with the use and enjoyment by plaintiffs of plaintiffs' prior rights.

Plaintiffs further pray that the Court enter its Mandatory Injunction requiring defendant to allow sufficient water to pass defendant's point of diversion so as to allow plaintiffs to have the full use

and enjoyment of plaintiffs' prior water rights and enjoining and restraining defendant from interfering therewith.

Plaintiffs further pray for damages against defendant in the sum of Fifteen Hundred (\$1,500) Dollars per day from June 28, 1948, until such time as defendant shall cease its interference with plaintiffs' water rights, together with costs of Court, together with such other further or different relief as the Court may deem meet, just and proper in the premises.

/s/ J. P. ZANNARAS.

COX, LOCKWOOD &  
LOCKWOOD,

By /s/ SIMPSON COX,  
Attorneys for Plaintiffs.

Duly Verified.

[Endorsed]: Filed July 12, 1948.

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[Title of District Court and Cause.]

ANSWER

Comes Now Defendant and for its answer to the complaint of Plaintiffs alleges:

I.

That it admits the allegations of paragraph I of said complaint.



## II.

Answering paragraph II of said complaint, Defendant alleges it is without knowledge or information sufficient to form a belief as to the matters and things therein set forth, except that Defendant denies that Plaintiffs herein had continuously used water from Burro Creek for mining purposes since the 27th day of August, 1947.

## III.

Answering paragraph III of said complaint, defendant admits that it has certain water rights in and to the waters of Boulder Creek and Burro Creek, and admits that it has been using said waters in its mining operations; that defendant denies each and every, all and singular, the allegations of paragraph III except as admitted herein.

## IV.

Answering paragraph IV of said complaint, defendant is without knowledge or information sufficient to form a belief as to the allegations thereof, except that defendant denies that it has wrongfully diverted any water from plaintiffs and denies that said operation of plaintiffs as described therein is a profitable one; and denies that plaintiffs have suffered any damage through wrongful acts of plaintiff.

Wherefore, having fully answered said complaint, defendant prays that plaintiffs take nothing thereby and that defendant have and recover its costs for

this cause expended, and for such other and further relief as may be proper in the premises.

SNELL, WILMER, WALSH &  
MELCZER,

By /s/ MARK WILMER,  
Attorneys for Defendant.

Receipt of Copy acknowledged.

[Endorsed]: Filed October 1, 1948.

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[Title of District Court and Cause.]

MOTION FOR LEAVE TO  
AMEND COMPLAINT

To: The Honorable District Court of the United  
States in and for the District of Arizona:

Comes now plaintiffs herein and move for leave to amend the complaint heretofore filed herein by substituting for Paragraph I in said complaint the following:

“That plaintiffs were at the time of the filing of the complaint herein and ever since have been and now are citizens of the State of Arizona and the United States of America, and the cause of action herein sued upon arose in the State of Arizona; that defendant, Bagdad Copper Corporation, is a corporation organized and existing under the laws of the State of Delaware and authorized to and doing business in the State of Arizona.”

Said motion is based on the fact that the original complaint does not sufficiently allege the diversity of citizenship of the parties, although such diversification does actually exist and justice requires that the motion be granted.

COX, LOCKWOOD &  
LOCKWOOD,

By /s/ LORNA E. LOCKWOOD,  
Attorneys for Plaintiffs.

Receipt of Copy acknowledged.

[Endorsed]: Filed October 18, 1948.

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In the District Court of the United States  
in and for the District of Arizona

No. Civ. 221-Prescott

JOHN PHILLIP ZANNARAS and J. P. ROBIN-  
SON, JR.,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Defendant.

FINDINGS OF FACT, CONCLUSIONS  
OF LAW, AND JUDGMENT

This matter having been heretofore tried and submitted to the court for determination and find-



ings of fact and conclusions of law having been heretofore submitted to the court and the court understanding the matter, the following findings of fact and conclusions of law are hereby made and adopted by the court:

I.

Plaintiffs are residents of Yavapai County, State of Arizona, and defendant is a corporation organized and existing under the laws of the State of Delaware, authorized to do and doing a mining business in the State of Arizona; that the matter in controversy exceeds, exclusive of interest and costs, the sum of Three Thousand Dollars (\$3,000.00).

II.

That plaintiffs have failed to prove by a preponderance of the evidence that defendant has appropriated any of plaintiffs' water.

III.

That plaintiffs have failed to prove by a preponderance of the evidence that plaintiff suffered any loss of profits by reason of any improper diversion of water by defendant, or that said plaintiffs have been interfered with in the operation of or carrying out of any bona fide mining or milling activity by any wrongful diversion of water by defendant, Bagdad Copper Corporation.

Conclusions of Law

From the foregoing facts the court makes the following conclusions of law:

1. Plaintiffs are not entitled to an injunction enjoining the diversion of water by Bagdad Copper Corporation and are not entitled to any damages from said Bagdad Copper Corporation.

### Judgment

Accordingly, It Is Ordered, Adjudged and Decreed, that plaintiffs take nothing by their action, and that defendant have and recover its costs in this behalf expended or incurred, and,

It Is Further Considered, Ordered, Adjudged and Decreed that this cause be retained by the court for further orders should same be deemed necessary in the future, in justice and equity properly to conserve and protect the rights of respective parties hereto.

Done in Open Court this 2nd day of January, 1951.

/s/ DAVE W. LING,  
District Judge.

Approved as to Form:

COX, LOCKWOOD &  
LOCKWOOD,

By /s/ SIMPSON COX,  
Attorneys for Plaintiffs.

SNELL & WILMER,

By /s/ MARK WILMER,  
Attorneys for Defendant.

[Endorsed]: Filed and entered January 2, 1951.

[Title of District Court and Cause.]

## PETITION FOR RELIEF

Come now the above-named plaintiffs and would respectfully represent to the Court as follows:

### I.

That in the judgment of the Court entered herein on the second day of January, 1951, the Court retained jurisdiction over the subject matter of the action, for the purpose of considering the rights of the parties hereto in the future.

### II.

That the protection of plaintiffs' water rights as granted to them by the State Water Commissioner is a matter of gravest importance to them and their industry in developing, mining and milling their ores and the recovery of tungsten and other metallic values; that without the water due under their appropriation it is impossible to operate plaintiffs' mines and mill and particularly to proceed with the development of the mines of plaintiffs and to mine and mill the ores therefrom, and their entire operation will be stopped solely from the lack of sufficient water with which to carry on operations.

### III.

That before defendant began to pump large quantities of water from Burro Creek there was ample water in the stream, at all times, at plaintiffs' point of diversion, to supply an amount sufficient to

fully cover the appropriation of water granted to plaintiffs by the State Water Commissioner of Arizona, and in addition a small surplus; that from and after the time defendant began to pump large quantities of water from Burro Creek, above plaintiffs' point of diversion, plaintiffs have found themselves wholly deprived of water from about the end of June until the month of December of each year.

#### IV.

That plaintiffs' mine and mill are now and for more than two years last past have been ready for operation and the developing, mining and milling of ore from plaintiffs' mines and mining claims; that all the waters granted to plaintiffs by the State Water Commissioner for use under the said grant or appropriation, to be taken from said Burro Creek at plaintiffs' point of diversion, are actually necessary for plaintiffs' use in developing, mining and milling the ores from plaintiffs' mines and mining claims.

#### V.

That it is uneconomic and wasteful to operate the mines and mill of plaintiffs spasmodically; that without the water supply granted to plaintiffs they can only operate in an off-and-on manner.

#### VI.

That plaintiffs' right to the use of waters from said Burro Creek being prior and superior to the right of defendant to the use of any of said waters of Burro Creek, it follows that plaintiffs should

have the amount of their appropriation and use as called for in their grant from the State Water Commissioner, at their point of diversion, and in the manner and form of their diversion and use under the conditions existing under their grant from the State of Arizona, by and through the State Water Commissioner, without any interference from defendant or others.

#### VII.

That plaintiffs are now able to show and demonstrate to the Court that defendant has been pumping large quantities of water from Burro Creek, above plaintiffs' point of intake, and as a direct result thereof plaintiffs have been wholly deprived of water in the year 1949 from about the end of June until November 17th, and in the year 1950, from September 1st until December 6th.

#### VIII.

That while this action was pending and during the trial thereof defendants continued to pump waters and deprive plaintiffs of the rightful amount and use of the waters of said Burro Creek.

#### IX.

That unless defendant is restrained by an order of this Court it will continue to pump the waters of Burro Creek, upstream from plaintiffs' point of diversion, to such an extent that plaintiffs will be deprived of the amount of water necessary to develop their mine and operate their mine and mill, and will prevent plaintiffs from obtaining the



amount of water their grant calls for, at their point of diversion.

X.

That plaintiffs have no plain, speedy and adequate remedy at law; that the equity power of the Court is needed to give to plaintiffs the relief required.

Wherefore, plaintiffs pray that the matter be inquired into by the Court and upon such inquiry an injunction issue herein restraining defendant from taking waters from Burro Creek in such manner and amount as will deprive plaintiffs of their right amount of water at their intake, and for such other orders as shall be just and proper.

/s/ J. E. RUSSELL,  
Attorney for Plaintiffs.

Duly Verified.

Affidavit of Service by Mail attached.

[Endorsed]: Filed February 8, 1951.

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[Title of District Court and Cause.]

MOTION TO MAKE PETITION FOR RELIEF  
MORE DEFINITE AND CERTAIN

Comes Now defendant and moves the court to require plaintiffs to make their petition for relief more definite and certain in the following particulars:

I.

That said plaintiffs be required to state the time at which it is alleged defendant began to pump large quantities of water from Burro Creek and the times when it is claimed that plaintiffs were deprived of the use of water by reason of such pumping as alleged in paragraph III of said petition.

II.

This motion is based upon the fact that the question as to whether or not defendant herein was depriving plaintiffs of water to which said plaintiffs were lawfully entitled has been heretofore adjudicated by the Court and the judgment thereon has become final.

III.

It is therefore important that the plaintiffs be required to specify with particularity the period in which it is claimed by them that this defendant has been pumping quantities of water which deprive plaintiffs of their claimed right. This information is necessary to enable defendant to properly plead to the petition, including a determination of whether or not a plea of *res judicata* should be interposed.

SNELL & WILMER,

By /s/ MARK WILMER,

Attorneys for Defendant.

Receipt of Copy acknowledged.

[Endorsed]: Filed March 6, 1951.

[Title of District Court and Cause.]

## AMENDED PETITION FOR RELIEF

Come now the plaintiffs above named and for their amended petition for relief allege:

### I.

That in the judgment of the Court entered herein on the second day of January, 1951, the Court retained jurisdiction over the subject matter of the action, for the purpose of considering the rights of the parties hereto in the future.

### II.

That the protection of plaintiffs' water rights as granted to them by the State Water Commissioner is a matter of gravest importance to them and their industry in developing, mining and milling their ores and the recovery of tungsten and other metallic values; that without the water due under their appropriation it is impossible to operate plaintiffs' mines and mill and to proceed with the development of the mines of plaintiffs and to mine, mill and reduce the ores therefrom, and plaintiffs' entire operation will be stopped if they are deprived of the water for which their prior appropriation and certificate provides for.

### III.

That before defendant began to pump large quantities of water from Burro Creek there was ample water in the stream, at all times, at plaintiffs' point of diversion, to supply an amount sufficient to fully cover the appropriation of water granted to



plaintiffs by the State Water Commissioner of Arizona, and in addition a small surplus; that during the year 1949 defendant was taking large quantities of water from Burro Creek, above plaintiffs' point of diversion, which taking of water by defendant was of such an extent that plaintiffs were wholly deprived of water from the thirtieth day of June until the seventeenth day of November of said year, and, again in the year 1950 defendant continued to take large quantities of water from said Burro Creek, above plaintiffs' point of diversion in such large quantities to entirely dry up the flow of water in said Burro Creek and totally deprive plaintiffs of water from the first day of September to and until the sixth day of December of said year.

#### IV.

That plaintiffs' mine and mill are now and for more than two years last past have been ready and in proper shape for operation and the developing, mining and milling of ores from plaintiffs' mines and mining claims; that all of the waters granted to plaintiffs by the State Water Commissioner of Arizona, for use under said grant and appropriation, to be taken from said Burro Creek at plaintiffs' point of diversion, are actually necessary for plaintiffs' use in developing, mining and milling the ores from plaintiffs' mines and mining claims.

#### V.

That it is uneconomical to operate plaintiffs' mines and mill in a spasmodic manner; that without

the water granted to plaintiffs under the authority of the State Water Commissioner of Arizona they can only operate in an on-and-off manner at great expense and waste.

## VI.

That as appears in the records of this cause the right of plaintiffs to the use of the waters of said Burro Creek are prior and superior to any rights that defendant may have in the waters of said Burro Creek, it follows that plaintiffs should have the amount of water required by them and the amount granted them under the authority of the State Water Commissioner of Arizona, at their point of diversion, which said point of diversion is down stream from the point where defendant is taking water from said Burro Creek; that plaintiffs are entitled to the flow of the stream in the manner and form in which it was before defendant's acts reduced the flow of the stream and as above stated dried up the flow entirely.

## VII,

That while this action was pending, during the trial thereof, and at all other times herein mentioned, defendant continued to take large quantities of water from said Burro Creek and to deprive plaintiffs of their rightful use of the waters of said Burro Creek under their permit and appropriation.

## VIII.

That unless defendant is restrained by an order of this Court it will continue to take large amounts

of water from said Burro Creek, above plaintiffs' point of diversion, to such an extent that plaintiffs will be deprived of the amount of water necessary for the developing of their mine and the operation of their mill.

IX.

That under the judgment herein plaintiffs have no remedy other than to apply to this Court in this action for the relief sought.

Wherefore, plaintiffs pray judgment:

That the matter be inquired into by the Court and such trial of hearing be ordered as to the Court shall appear just and proper;

That upon the hearing the Court enter such judgment as shall appear just and proper under the evidence and facts of the cause;

That defendant be enjoined from interfering with plaintiffs' water and water rights and depriving them of their necessary water;

That the Court grant such other and further relief as shall be just and equitable.

/s/ J. E. RUSSELL,

Attorney for Plaintiffs.

Duly Verified.

[Endorsed]: Filed March 28, 1951.

[Title of District Court and Cause.]

ANSWER TO AMENDED PETITION  
FOR RELIEF

Comes Now, defendant and for its answer to the amended petition for relief of plaintiffs alleges:

I.

Defendant admits the allegations of paragraph I of said amended petition for relief.

II.

Defendant denies the allegations of paragraph II of said amended petition for relief.

III.

Answering paragraph III of said amended petition for relief, defendant denies that plaintiffs have been deprived of any water to which they were legitimately entitled and which would have served any useful purpose in the operation of plaintiffs' properties.

IV.

Answering paragraph IV of said petition, defendant denies the allegations thereof.

V.

Answering paragraphs V, VI, VII, VIII and IX of said petition, defendant denies the allegations thereof.

VI.

Further answering said petition, defendant makes reference to Civil Cause No. 321 pending herein

and by reference incorporates in this answer the allegations of said defendants' complaint as filed in this court.

Wherefore, having fully defended against said petition, defendant prays that plaintiff take nothing thereby and that it have and recover relief as prayed for in said Civil Cause No. 321.

SNELL & WILMER,

By /s/ MARK WILMER,

By /s/ JAMES A. WALSH,

Attorneys for Defendant.

Receipt of Copy acknowledged.

[Endorsed]: Filed April 16, 1951.

---

[Title of District Court and Cause.]

RENEWAL OF MOTION TO SET  
CAUSE FOR HEARING

The plaintiffs above named, respectfully renew their motion, which has heretofore been denied, by the court, to set the above cause for hearing, for the taking of further evidence, pursuant to the order of the court, heretofore entered. The grounds of this motion being:

1. At the termination of the hearing of said cause, the Court announced that it desired evidence, in order to determine the character of the judgment, to be entered, in favor of plaintiffs.



2. The plaintiff's were under the impression that the Court had actually determined that they were entitled to a judgment, and the only question in the Court's mind was the character of the judgment to be entered, which would settle the controversy for all time.

3. The defendant, Bagdad Copper Corporation, the plaintiff in Cause Number 321, has now appealed the decision of the Court in that cause to the Circuit Court of Appeals. It is probable that no ruling will be obtained from the Circuit Court in less than one year. Plaintiffs feel, however, that in all probability, the decision of this Court will be sustained. The appeal, however, does not, in any sense, act as a stay of execution. For all practical purposes, the plaintiffs have a valid prior water right and are entitled to have their water come to their point of diversion without interference on the part of the defendant in this cause.

4. The evidence in this case clearly showed that for at least five months out of every year, plaintiffs, due to defendant's pumping of water, were deprived of their supply. It further appears conclusively, from the testimony, that the plaintiffs could not operate on an on-and-off basis, and that milling operations, to be feasible and commercial, would have to be on a year round basis.

5. The plaintiffs are desirous of immediately adding to their milling facilities, and to begin milling operations within sixty days, provided they are assured, by the entry of a judgment in this case, that the defendant will be required to let down

sufficient water, particularly during the Summer months for their milling operations. The cost of complete rehabilitation of the plant, would be approximately \$40,000.

6. The plaintiffs are presently negotiating with the proprietors of the Old Dick Mine, near their property, for the milling of a very large supply of ores. In order to handle this business, plaintiffs will be required to enter into a contract for several years and to mill continuously without interruptions.

7. This cause is in no way dependent on Civil Cause Number 321. As stated, the judgment in that case must be considered as final. The plaintiffs have the legal right to an early determination of this cause. There would appear to be no legal obstacle to the final determination of this cause, pending the determination of Number 321 on appeal.

For the reasons stated, the plaintiffs urge that this cause be set for trial, for further hearing at the earliest possible date, so that a final determination can be had. This motion is supported by the affidavit of John Philip Zannaras, one of the plaintiffs, the President of U. S. Tungsten Corporation, the present owner of the property. Mr. Zannaras is a registered mining engineer of wide experience, and is fully familiar with the problems concerning the milling operations involved in this litigation.

Dated this 3rd day of December, 1953.

/s/ JOSEPH H. MORGAN,  
Attorney for Plaintiffs.

[Title of District Court and Cause.]

AFFIDAVIT IN SUPPORT OF  
FOREGOING MOTION

State of Arizona,  
County of Maricopa—ss.

John Philip Zannaras, being first duly sworn,  
deposes and says:

He makes this affidavit on behalf of all of the plaintiffs and for the purpose of showing that it is essential that an early hearing be had in said Cause 221, so that the Court may enter its judgment relative to use of water, under prior appropriation, as determined by the Court in Cause 321.

It is utterly impossible for a milling operation of the kind and character, required in recovering values from the plaintiffs' tungsten ores, to do work on an on-and-off basis.

U. S. Tungsten Corporation, the present owner of the property, has blocked out a large supply of tungsten ores of the value of \$20 and upwards, per ton, which can be milled with profit if a continuous milling operation can be carried on. In order to make maximum recovery of values, the plaintiffs should expend not less than \$40,000 for additional equipment, which plaintiffs' former operations and new improved methods disclosed would be necessary. Such expenditure could not be well justified unless plaintiffs were assured that the defendant would be



compelled to let down sufficient water, particularly during the Summer months, for their needs.

Upon entry of a judgment deciding the issue in 221 the plaintiffs will proceed to make such improvements and hope to be in full milling operation within sixty days thereafter.

Furthermore, the plaintiffs are now negotiating with the proprietors of the Old Dick Mine for milling of their ores. This property has a large supply of high grade zinc and copper ores, at a reasonable distance from the plaintiffs' mill. In order to secure this business, the plaintiffs would be required to enter into a contract covering a period of several years and be able to assure the owners of the Old Dick Mine that they could mill the year round.

/s/ JOHN PHILIP ZANNARAS.

Subscribed and sworn to before me this 3rd day of December, 1953.

[Seal]      /s/ LAWRENCE C. CANTOR,  
Notary Public.

My commission expires: April 21, 1954.

Receipt of Copy acknowledged.

[Endorsed]: Filed December 5, 1953.

[Title of District Court and Cause.]

PLAINTIFFS' MOTION FOR SUBMISSION  
OF CAUSE

Came now the plaintiffs above named and respectfully moved the Court to enter an order submitting said cause, on the transcript of testimony covering hearing of March, 1954, and upon plaintiffs' Submitting Memorandum filed on June 4, 1954, for the reasons following:

1. The defendant has filed no brief or memorandum in accordance with the order heretofore made by the Court in submitting said cause. Defendant's time for filing brief or memorandum has long since expired.

2. As shown by affidavit attached hereto, it is essential that said cause be submitted and determined as early as possible in order that plaintiffs may proceed with their milling operations without deprivation of water.

3. Attached hereto is affidavit showing the situation and the same is hereto referred to and made a part of this motion.

Dated this 7th day of June, 1954.

/s/ JOSEPH H. MORGAN,  
Attorney for Plaintiffs.

Notice

To Bagdad Copper Corporation, a corporation, defendant, and to Messrs. Snell & Wilmer, its attorneys of record:

You and each of you are hereby notified that the above and foregoing motion will be presented to the Court at the Federal Courthouse in Phoenix, Arizona, on Monday, June 14, at the hour of 10:00 o'clock a.m.

Dated this 7th day of June, 1954.

/s/ JOSEPH H. MORGAN,  
Attorney for Plaintiffs.

Receipt of above motion, notice and attached affidavit acknowledged this 7th day of June, 1954.

SNELL & WILMER,

/s/ MARK WILMER,  
Attorneys for Defendant.

AFFIDAVIT

State of Arizona,  
County of Maricopa—ss.

John Phillip Zannaras, being first duly sworn, deposes and says:

He is one of the plaintiffs above mentioned in the foregoing motion.

Since the hearing of the above case in March, 1954, have expended approximately \$15,000 on their mill. Its capacity has been enlarged and plaintiffs will be able to mill approximately 150 tons per day if and when water is steadily available.

Plaintiffs have a large supply of crushed ore ready for milling. The value is \$20 per ton.

The defendant is presently using all water in Burro Creek at its point of diversion. As a consequence of this, the water is now beginning to fail at plaintiffs' point of diversion. Deponent states from former experience that the Creek will be dry before the end of the present month, and there will be no water available for plaintiffs' milling operation, in all probability, before December, except when there may be some flash floods.

/s/ JOHN PHILLIP ZANNARAS.

Subscribed and sworn to before me this 7th day of June, 1954.

[Seal]      /s/ JESSIE BERNEY,  
Notary Public.

My commission expires 12-19-55.

[Endorsed]: Filed June 7, 1954.

[Title of District Court and Cause.]

COURT'S MEMORANDUM ON  
PETITION FOR RELIEF

This cause is before the Court upon plaintiffs' motion for further hearing.

The evidence submitted is not sufficient to enable the Court to find as a fact that during critical months of the year, even if Bagdad ceased its pumping operations, that water would reach the Zannaras point of diversion, and the rule announced in *Albion-Idaho Land Co. vs. NAF Irr. Co.* 97 F. 2d 439, would therefore appear to be applicable.

“While ordinarily a prior appropriator has a paramount right to divert water from the stream and a junior appropriator may not divert water unless the waters flowing in the stream are in excess of the amount which the prior appropriator has the right to divert, if, due to seepage, evaporation, and channel absorption or other physical conditions beyond the control of the appropriators, the water flowing in the stream will not reach the diversion point of the prior appropriator in sufficient quantity for him to apply it to beneficial use, then a junior appropriator whose diversion point is higher on the stream may divert the water. The paramount right of the prior appropriator does not justify him in insisting that the water be wasted and lost by denying its use to the junior appropriator under such circumstances.”

Plaintiffs having failed to prove by a preponderance of the evidence that defendant has appropriated any of plaintiffs' water, they are not entitled to an injunction.

Dated: March 29, 1957.

/s/ DAVE W. LING,  
Judge.

[Endorsed]: Filed March 29, 1957.

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[Title of District Court and Cause.]

## FINDINGS OF FACT AND CONCLUSIONS OF LAW AND JUDGMENT

This matter was heard upon the amended petition for relief of John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, a corporation, and the answer to said amended petition for relief of Bagdad Copper Corporation. Said matter having been under advisement, the Court now makes the following findings of fact and conclusions of law.

1. The mill of plaintiffs and their mill site for which water is claimed by plaintiffs is located on Burro Creek, a tributary of the Bill Williams River, which in turn is a tributary of the Colorado River, at a point on said Burro Creek approximately seven to eight miles below the point of diversion of Bagdad Copper Corporation, a corporation.



2. Burro Creek is a seasonal stream, generally wasting away, or tending to waste away, during the months of June, July, August, and on occasion, September in each year, depending upon the rainfall on it watershed. During the remaining months of the year there is generally adequate water in Burro Creek for all claims of both plaintiffs and defendant.

3. Above the point of Diversion of Bagdad Copper Corporation, the channel of Burro Creek flows through generally a bedrock surface channel without substantial overlaying gravels or sand. Immediately below the Bagdad point of diversion and lying between the Bagdad point of diversion and what is commonly known as the old Kingman crossing, a public highway, Burro Creek opens out into a long, flat basin of varying widths, which basin contains approximately 1374 acres. Below the Kingman crossing and to the point of diversion of plaintiffs herein, the channel of the Creek is restricted to a generally narrower channel with the area within the walls of the channel between the Kingman crossing and the plaintiffs' point of diversion containing approximately 82 acres.

4. The basin lying below the Bagdad point of diversion and above the Kingman crossing is overlaid with a heavy deposit of sands and gravel and is substantially overgrown with vegetation such as mesquite, cottonwood and other desert vegetation.

There is a very high loss of water from this basin due to evaporation and to transpiration from the

vegetation growing therein during the hot summer months, which are the months during which Burro Creek tends to waste away.

5. The evidence is insufficient to enable the Court to determine whether the pumping by the defendant Bagdad Copper Corporation during seasons of scarcity has any bearing upon the failure of the water flowing past its point of diversion to reach the point of diversion of plaintiffs due to the high rate of evaporation and transpiration.

### Conclusions of Law

1. If the evidence is insufficient to enable the Court to determine as a fact that the use of water by an appropriator results in injury to the appropriation and the water right of another appropriator, an injunction will not lie.

2. The petitioners and plaintiffs having failed to establish the allegations of their petition and complaint, judgment must be rendered for the defendant.

### Judgment

It Is Ordered that the Clerk enter judgment in favor of the defendant Bagdad Copper Corporation and against the plaintiffs, John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation that said plaintiffs take nothing by their amended petition for relief and that defendant have judgment for costs.



Done in Open Court this 17th day of April, 1957.

/s/ DAVE W. LING,  
District Court Judge.

[Endorsed]: Filed and docketed April 17, 1957.

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[Title of District Court and Cause.]

### NOTICE OF APPEAL

Notice Is Hereby Given that John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, a corporation, plaintiffs in the above-entitled cause, hereby appeal to the United States Court of Appeals for the 9th Circuit, from the judgment entered in the above-entitled and numbered cause on the 17th day of April, 1957.

MOEUR & JONES,

By /s/ W. J. MOEUR,

By /s/ ANTHONY A. JONES,  
Attorneys for Plaintiffs.

Receipt of Copy acknowledged.

[Endorsed]: Filed May 14, 1957.

[Title of District Court and Cause.]

### BOND OF COST

Know All Men by These Presents:

That we, John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation as Principal, and Fidelity and Deposit Company of Maryland, as Surety, do hereby acknowledge ourselves jointly and severally bound to Bagdad Copper Corporation, a corporation, Defendant, for all costs in above-entitled suit, not to exceed, however, the sum of Two Hundred Fifty and No/100 Dollars.

Conditioned, However, that the said John Phillip Zannaras, J. P. Robinson, Jr., and U. S. Tungsten Corporation, Plaintiff, will pay all costs that may be adjudged against it in said suit, during its pendency or at the final determination thereof, and judgment for said costs may be entered against us, and each of us, up to the full penalty of this bond, in the final judgment of this cause.

Witness our hands and seals this 25th day of April, A.D. 1957.

/s/ JOHN PHILLIP ZANNARAS,  
FIDELITY AND DEPOSIT  
COMPANY OF MARYLAND,

By /s/ JOSEPH D. ROME,  
Attorney-in-Fact.

Countersigned by:

THE VALLEY NATIONAL  
COMPANY-INSURANCE,

/s/ M. A. CARLSON,  
Agent.

[Endorsed]: Filed May 14, 1957.

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[Title of District Court and Cause.]

ORDER EXTENDING TIME

Good cause appearing therefore, It Is Ordered that the Plaintiffs' time within which to file the record on appeal and docket the appeal herein in the United States Court of Appeals for the Ninth Circuit, be and it is hereby extended to and including July 23, 1957.

Dated at Phoenix, Arizona, this 17th day of June, 1957.

/s/ DAVE W. LING,  
United States District Judge.

Approved this 17th day of June, 1957.

SNELL & WILMER,

By /s/ MARK WILMER,  
Attorneys for Defendant and  
Appellee.

[Endorsed]: Filed June 17, 1957.

In the District Court of the United States in and  
for the District of Arizona

Civil 221-Prescott

JOHN PHILLIP ZANNARAS and J. P. ROBIN-  
SON, JR.,

Plaintiffs,

vs.

BAGDAD COPPER CORPORATION, a Corpora-  
tion,

Defendant.

### REPORTER'S TRANSCRIPT

The above-entitled and numbered cause came on duly and regularly to be heard before the Honorable Dave W. Ling, Judge, presiding in the above-entitled court, without a jury, on the 3rd day of March, 1949, commencing at the hour of 10:00 o'clock a.m.

The plaintiffs were represented by Mr. Z. Simpson Cox, of Messrs. Cox, Lockwood & Lockwood.

The defendant was represented by Mr. Mark Wilmer, of Messrs. Snell, Wilmer, Walsh & Melczer.

The following proceedings were had:

The Clerk: Civil 221-Prescott, John Phillip Zannaras and J. P. Robinson, Jr., versus Bagdad Copper Corporation, a corporation, defendant, for trial.

The Court: Ready?

Mr. Cox: The plaintiffs are ready, your Honor.

Mr. Wilmer: The defendant is ready.

The Court: Call your first witness.

Mr. Cox: Call Mr. Robinson.

JOHN P. ROBINSON, JR.

was called as a witness in his own behalf, and being first duly sworn, testified as follows:

Direct Examination

By Mr. Cox:

Q. State your name.

A. John P. Robinson, Jr.

Q. You are one of the plaintiffs in the action of John P. Robinson—I mean John Phillip Zannaras and J. P. Robinson, Jr., versus the Bagdad Copper Corporation?

A. Yes.

Q. What is your business, Mr. Robinson?

A. Mining.

Q. Do you know Mr. Zannaras, the other plaintiff?

A. Yes, sir.

Q. When did you first know Mr. Zannaras?

A. In October, 1939.

Q. Did you become associated with him at [2\*] that time?

A. Yes.

Q. In what field of endeavor?

A. Mining.

Q. What activities did you and Mr. Zannaras have from '39 on up until your location where you now are operating?

A. Well, in '39 we started out investigating various mining properties in California and in the southern part of Arizona.

Q. Did you locate that property?

A. We located one property in February or March of '40.

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\*Page numbering appearing at top of page of original Reporter's Transcript of Record.



(Testimony of John P. Robinson, Jr.)

Q. Where was that?

A. That was in Yuma County.

Q. Thereafter, did you develop that property?

A. No, we never did.

Q. Did you thereafter locate any other property?

A. Yes. We came up to our present location and we at first leased a group of gold mining claims known as the Mystery Mining Claims before the previous claims which we now have.

Q. You say your present location. Now, just where, geographically in Arizona, is that, Mr. Robinson?

A. Well, the exact location is approximately [3] Township 13 North, Range 11 West, somewhere nearabouts, in Yavapai County, northwestern part of Yavapai County.

Q. How do you get there from Phoenix?

A. You go to Congress Junction and take the new road back into 45 miles from Congress Junction and turn off the new road, about eight miles down into Burro Creek, and the mining property is eight miles this side to the right, six miles in a southern direction from Bagdad.

Q. Six miles in a southerly direction from Bagdad, you say?

A. Yes.

Q. When you found the properties up near Burro Creek what did you first do there?

A. Well, when we got to Burro Creek we laid out our millsite. We picked the location and laid out the millsite on Burro Creek and applied for water rights.



(Testimony of John P. Robinson, Jr.)

Q. About when was that?

A. That was around the first of June—in June some time in '40.

Q. Then what did you do?

A. Well, we started to constructing a road and cabins and then kept on constructing a road up to the millsite where we were going to construct the [4] mill. We dug out the necessary earth, built retaining walls and laid the foundation for the Ball Mill. We then constructed two large 7000 gallon concrete storage tanks, constant storage concrete tanks. We put in a feeder for the Ball Mill and a bin. We put in a 50 ton Gibson Impact Amalgamator, put in a 12 by 18 duplex mineral jig, primary and secondary concentrator tables. Below that a 7000 gallon concrete thickener tank. We have two motors—have two gasoline motors for the operation of the equipment, necessary shafting, belting, and so forth. The mill is partially enclosed. We installed 1500 feet of pipeline from Burro Creek to the tank. We put in a pump, five by five duplex pump and a motor to operate it, and taking our water directly from Burro Creek.

Q. Then, have you located any mining claims there in that locality, general locality?

A. Yes, we located what is called the Zanapolis group of mining claims. It is tungsten.

Q. Do you recall about when you discovered ore there? A. It was in '41.

Q. You say you leased the Mystery Claims?

A. Yes.

Q. What type of ore are those claims? [5]

(Testimony of John P. Robinson, Jr.)

A. That is gold.

Q. Those Zannarapolis Claims, what type of ore?

A. Tungsten.

Q. How many claims altogether do you have up there now?      A. 34.

Q. Did you at any point in your construction run any test runs of your mill?

A. Yes, we had our mill set up.

Q. Just yes or no.      A. Yes.

Q. About when?

A. That was in the early part of '42.

Q. I think you said the Zannarapolis claims were tungsten claims, or did you say?      A. Yes.

Q. These are lode claims or placer claims?

A. Lode claims.

Q. What development work have you done or had you done on the Zannarapolis claims?

A. Well, we originally started at the lower end of the claims and we constructed three and one-half miles of road to get in there, and we started the work at the lower end, digging what we call the open pit material that we have. It is a large deposit right in the side of the hill, and we [6] started open cutting there, developing the area on the lower end.

Q. Did you develop ore there?      A. Yes.

Q. What other work did you do in developing those Zannarapolis claims?

A. After doing some development work on this end, we built another two miles of road, not quite two miles of road, to the upper end of the claims and started sinking a shaft at the upper end.

(Testimony of John P. Robinson, Jr.)

Q. What size is that shaft? A. 8 by 10.

Q. And about how deep?

A. About 50 feet.

Mr. Cox: Mark that.

(Thereupon the document was marked as Plaintiffs' Exhibit 1 for identification.)

Q. (By Mr. Cox): Have you taken any ore from the open cut?

A. We ran a test at the mill.

Q. Has there been ore taken from the shaft?

A. Yes, sir.

Q. Do you know about how much?

A. Well, I don't know the exact figure. We took 10 tons——

Q. You what? [7]

A. We took 10 tons and shipped it to the stock pile, in the Metals Reserve stock pile during the war.

Q. You mean you sold that to the Government, the Metals Reserve stock pile? A. Yes.

Q. Now, getting back to Burro Creek, what is the nature of the country that Burro Creek runs through; is it soil and sandy loam, rock, or what?

A. In the flat country, the flat places that it runs through it is sand, and the rest of it is mostly rock.

Q. Now, since you have been on Burro Creek, have you and Mr. Zannaras used the water from Burro Creek? A. Yes, sir.

Q. And for what purpose have you used the water?

(Testimony of John P. Robinson, Jr.)

A. For mining, milling, and domestic purposes.

Q. You state you made application for a water permit. Were you granted that permit?

A. Yes.

Q. And after that time was there a certificate of water right issued on that permit? A. Yes.

Q. I show you Plaintiffs' Exhibit 1 for identification and ask you if that is the permit that was granted [8] to Mr. Zannaras?

A. That is it.

Mr. Cox: I mean the water right granted to Mr. Zannaras. We offer that in evidence.

Mr. Wilmer: May I ask a question on voir dire?

Mr. Cox: Yes.

Q. (By Mr. Wilmer): Mr. Robinson, did you sign the proof of appropriation which was filed in the office of the State Land Department, the State Water Commissioner, upon which this certificate was issued?

A. I don't recall that I signed it or not. I might have. I don't recall that I signed it or not.

Q. At the time when the application was made to the State Water Commissioner for the issuance of this certificate, had you or Mr. Zannaras actually applied for three million gallons a year in any one year to a beneficial use?

A. Would you repeat that, please?

Q. Had you or Mr. Zannaras, in connection with this application, actually applied three million gallons of water in the preceding year to a beneficial use? A. Before the application was issued?



(Testimony of John P. Robinson, Jr.)

Q. Before proof was filed?

A. Before proof was filed? [9]

Q. Yes.

A. We had not used the full amount, no.

Q. Did you state in this proof that you had used three million gallons?

A. I don't recall that we had used three million gallons. I believe we said we were using it. We had not completed building yet.

Mr. Cox: I will withdraw the offer at this time because I don't think this witness knows.

Q. Did you observe Burro Creek and the water in Burro Creek at the time you went up there and since that time? A. Yes.

Q. Will you just tell the Court what type of flow, how this Burro Creek ran; is it continuous running or is it dry-for-months run, just explain how Burro Creek——

A. Well, in '40, according to the people who have lived in that country——

Q. No, just what you observed, just what you saw.

A. Well, when we was up there it was a dry season in '40 and there was water running in Burro Creek at that time.

Q. And was there any time after that up until June of '48 when there wasn't water running in [10] Burro Creek?

A. There was also some water in Burro Creek.

Q. Was there any time that there was not suf-

(Testimony of John P. Robinson, Jr.)

ficient water to run your pumps from '40 until June of '48?      A. No.

Q. Were you there on the Burro Creek property continuously from '40 to date?

A. No, I left October 17th, 1948.

Q. Well, were you on the property then continuously from '40 to '48?      A. Yes.

Q. Out living on the Bagdad property all of that time?      A. Beg pardon?

Q. You lived on the Bagdad property all the time?      A. No, living on our own property.

Q. I don't mean Bagdad, I mean the property near Burro Creek?      A. Yes.

Q. Weren't you in the service?

A. Yes, I was two years in the Service; '45 to June, '47.

Q. You didn't live on the property at that time did you? [11]      A. No, I didn't.

Q. When did you go into Service?

A. May, '45.

Q. And you came out when?      A. June, '47.

Q. In May, '45, what was the condition of the mill; state whether or not it was ready or not ready to operate?

A. It was ready to operate, but we could not.

Q. Why?      A. The water was polluted.

Q. When did you come back from Service, you say?      A. June, '47.

Q. Did you go immediately to your mining claims and millsite then?      A. Yes.



(Testimony of John P. Robinson, Jr.)

Q. What was the condition of the mill then; state whether or not it was ready to operate?

A. Well, it took a little bit of repairing. I overhauled some more of the equipment and it was ready to operate.

Q. And will you tell then, after you got back from Service, what you did toward getting the mill ready to operate and getting to—developing the property?

A. Well, I came back in June and I brought the [12] wife with me and I wanted to be near her for a short time until she got used to the desert, so we constructed a laboratory not far from our house. Immediately upon the completion of that, we went to mining and diligently stayed at the mining until in December I brought my wife to Phoenix for another child. In January, then, we started doing development work and ran a test at the mill and did some timbering and preparation to put on a crew of men. In June we were prepared—around the first of June we were prepared to go ahead with our operation, full scale operation. We had hauled down to the mill a bin of ore and pumped up the water, was preparing to bring men out for eight hour operation, and on June 28th when we went down—we started the pump in the morning and the pump ran for just a few minutes, and we looked up and saw there was no water coming out, so we went down to the creek to see what was the trouble, and the suction line on our pipe was out of water so we then dug a hole down to bedrock. We thought we could

(Testimony of John P. Robinson, Jr.)

get seepage, but there was insufficient seepage. We pumped it dry then in around 45 minutes, and in the afternoons, if we would let the hole stay there to fill up with water, we would wait as much as three to four hours and then [13] pump it dry in as much as 18 to 20 minutes, and on cloudy days it may run to 25 minutes, we would pump it dry.

Q. What did you then do—did you run your mill then?

A. No, it wasn't feasible to hire men to run the mill.

Q. Why?

A. Because you can't operate a mill when you have no water; 20 minutes, you can't have men waiting an hour.

Q. Did you make any check as to the water in the creek then?

A. Yes. We immediately after that, we went up to Bagdad and drove down to their diversion point on Burro Creek and found there was sufficient water coming into the little pond where they took their water out of. There was nothing coming below that.

Q. You say "sufficient," you mean there was water flowing in there upstream?

A. Yes, lots of water upstream. We walked up the creek and there was plenty of water, but after reaching the diversion creek at Bagdad there was no water.

Q. What did you then do? [14]

A. Well, I took some pictures there of the creek

(Testimony of John P. Robinson, Jr.)

and we made a trip over to the ranch below and there was no water at the ranch.

Q. Now, the ranch is downstream from the Bagdad diversion?      A. Downstream, yes.

Q. What next?

A. Well, they had been at one time irrigating a little land there, but it was all dry and growing up with weeds. They have not irrigated for quite some time, there was insufficient water.

Q. What did you do after that?

A. We came down to Phoenix.

Q. About when was this, now?

A. That was right around the 1st or the 2nd day of July, '48.

Q. That you came to Phoenix?

A. Came to you, yes.

Q. Now, you say you left the property up there on October 17th, I believe you said?      A. Yes.

Q. Between June 28th, when you say you found there was no water there, and October 17th, was there any time sufficient water to operate your pumps and the mill?

A. No, no water. [15]

Q. On October 17th, where did you go?

A. October 17th? I came to Phoenix, was here about a week, and then I went to the United States Gypsum Plant in Midland, California, as a mill operator.

Q. What are you now doing?

A. I am a mill operator for the United States Gypsum Company.

(Testimony of John P. Robinson, Jr.)

Q. You intended to stay in that business as a mill operator there?

A. No, I don't intend to stay in that business, but I was forced to go into it because I just reached the point where I was to get some returns from the property, and it set me financially back, and I carried on from June until October, and with the wife and children, I just had to get out and go to work.

Mr. Cox: Mark this.

(The documents were marked as Plaintiffs' Exhibits 2, 3, 4, 5 and 6 for identification.)

Mr. Cox: If the Court please, I would like to withdraw from Civil Case No. 129-Prescott, Defendant's Exhibit A for identification to have it identified in this case.

(Thereupon the document was marked as Plaintiffs' Exhibit No. 7 for identification.) [16]

Mr. Cox: You say you took some pictures at the Bagdad diversion point. I show you Plaintiffs' Exhibit 2 for identification and ask you if that is one of the pictures that you took? A. Yes.

Q. Or an enlargement of it?

A. That is right.

Q. Will you look at that picture closely? Does that picture truly represent the situation there at the diversion point as you saw it on that day?



(Testimony of John P. Robinson, Jr.)

A. Yes.

Mr. Wilmer: No objection.

Mr. Cox: We offer Plaintiffs' Exhibit 2 in evidence.

The Court: It may be received.

(Thereupon the document was received as Plaintiffs' Exhibit 2 in evidence.)

Q. (By Mr. Cox): Will you explain to the Court there Plaintiffs' Exhibit 2 just what is shown by that picture if you will, Mr. Robinson.

A. Well, that shows the intake valve and the pump at the Bagdad diversion point and the little pond or sump-like where they take their water from, plus a ladder that is used for raising and lowering the suction, depending on the amount of water [17] in Burro Creek.

Q. And the water then goes out of the sump up over the banks of Burro Creek?

A. Up over the top, yes.

Q. When the water goes over the top, where does it go into?

A. It goes into a tank, a large steel tank up on the top, up on the bank.

Q. I show you Plaintiffs' Exhibit 3 for identification and I will ask you if that is also one of the pictures you took on that day? A. Yes.

Q. Does that truly represent the situation as it looked on that day? A. Yes.

Mr. Wilmer: No objection.

(Testimony of John P. Robinson, Jr.)

Mr. Cox: We offer Plaintiffs' Exhibit No. 3 for identification in evidence.

The Court: It may be received.

(Thereupon the document was marked as Plaintiffs' Exhibit 3 in evidence.)

Q. (By Mr. Cox): Now, Plaintiffs' Exhibit No. 3 in evidence, does that represent the tanks there as they are? A. Yes.

Q. What is the pipe that goes up the side of [18] the tank and ells off?

A. It comes from the suction line in the previous picture and goes into that tank.

Q. Was there or was there not water flowing there on that day? A. There was water.

Q. Calling your attention to the photograph. There seems to be a light place at the end of that pipe. Is that where the water flows from?

A. That is right. It is coming out there and the light was shown up in the photograph due to the light shining, coming through the water, shows up light.

Q. I show you Plaintiffs'—

Mr. Wilmer: If I could see all of these pictures at one time I think we could stipulate and that will save time.

The Court: Yes, save a lot of time, show them all to him. Are they all marked?

Mr. Cox: They are all marked.

The Court: All right, show them to Mr. Wilmer.

Mr. Wilmer: We will agree they are all pictures taken of that area up there.



(Testimony of John P. Robinson, Jr.)

Mr. Cox: They may be admitted.

Mr. Wilmer: Sure.

(Thereupon the documents were marked [19]  
as Plaintiffs' Exhibits 4, 5 and 6 in evidence.)

Q. (By Mr. Cox): What does Plaintiffs' Exhibit 4 show?

A. That shows the tailings pond at the Bagdad Copper Company.

Q. After the water leaves the tank shown in Exhibit 3 in evidence, where does it go?

A. It goes through the mill.

Q. How far is that from the tank, approximately?

A. Seven and one-half miles from those tanks.

Q. And from the mill where does it go?

A. It goes into the tailings pond.

Q. Approximately how far is the tailings pond from the mill?      A. 300 feet—350 feet.

Q. Calling your attention to this photograph, the automobiles and telephone poles, about what is the size of that tailings pond?

A. I wouldn't know.

Q. Was that tailings pond there in '40?

A. No.

Q. Do you know about when it was put in?

A. I don't know the exact date, but it was put in just about—well, it was started when we instigated our civil suit against them.

Q. What was that, '44 or '45?

(Testimony of John P. Robinson, Jr.)

A. '44 we started it, I believe. It was finished up [20] while I was in the Army. I don't know.

Q. It was some time in that neighborhood that the pond was put in? A. Yes.

Q. And Exhibit 5, what does——

A. That is the breast of the dam and this is seepage of water that comes out from the tailings pond.

Q. Now, you say there was water flowing into the sump shown on Exhibit 2? A. Yes.

Q. I show you Exhibit 6 in evidence and ask you what that is.

A. That is a picture of the same diversion point up from the lower side in the bed of the creek.

Q. Is there anything in that picture that you can identify that shows in Exhibit 2 in evidence?

A. The pump is right there. There is the electric pump.

Q. Will you take a pencil and on the side draw an arrow to that pump?

(The witness complies.)

Q. Write "pump" on there.

(The witness complies.)

Q. And the foreground of this picture is [21] downstream then from that diversion point?

A. Yes.

Q. The land in the foreground or bed in that stream there being dry? A. That is right.

Q. You stated that you sold 10 tons of ore to the Metals Reserve Company. Were you paid for that ore? A. Yes.

(Testimony of John P. Robinson, Jr.)

Q. Did you receive a settlement sheet from the Metals Reserve Company for your payment on that ore?      A. Yes.

Q. I show you Plaintiffs' Exhibit 7 for identification and ask you if that is the sheet?

A. Yes.

Q. And were you paid in accordance with the calculations on that sheet?      A. Yes.

Q. And do the calculations on that sheet show the amount of tungsten in the ore that you sold?

A. Yes, 1.92.

Q. Well, just does that show? We offer Plaintiffs' Exhibit 7 for identification in evidence.

Mr. Wilmer: I don't believe it is material, your Honor, whether the proper foundation has been laid for that or not. [22]

The Court: It may be received.

(Thereupon the document was received as Plaintiffs' Exhibit 7 in evidence.)

Mr. Cox: After you had installed your storage tanks and pump from Burro Creek, did you at any time use that pump to pump water?      A. Yes.

Q. And do you know the capacity of the pump, how much water it pumps?

A. I don't know. It is a 5 by 5 Duplex. It should pump about 1,500 gallons an hour. I am not sure. I wouldn't know the technical point of it.

Q. You say you don't know the technical—how much it does?

(Testimony of John P. Robinson, Jr.)

A. No. Mr. Zannaras takes care of all the technical points.

Q. Are you an engineer?

A. No, I am not an engineer.

Q. Do you know whether Mr. Zannaras is or not?

A. Yes, I do.

Mr. Wilmer: I object to that as calling for a conclusion.

Q. (By Mr. Cox): Did you say you did pump water?

A. Yes.

Q. And do you know how much you pumped?

A. I don't know. We pumped considerable. [23]

Q. Do you know the size of your tanks there?

A. 7,000 gallons.

Q. You are at present, I think you said, a mill operator. What about the mill you have up there, what type of milling will it do?

A. Well, it is dry milling. It is gypsum ore.

Q. No, no, I mean at the Burro Creek property.

A. Well, we can do practically anything. We can do amalgamation, we can do concentration, gravity concentration, and our thickener tank is so set up we can do flotation and gold amalgamation.

Q. What is the capacity of that mill?

A. 50 tons.

Q. 50 tons per what?

A. 24 hours.

Q. Does that mean continuous 24 hour run?

A. Yes.

Q. Have you run any ore through the mill other than the first test run you have just testified about?

A. Yes.

(Testimony of John P. Robinson, Jr.)

Q. And about how much?

A. Well, it is pretty hard to say how much. We hauled quite a bit down there.

Q. Well, have you had any other use for your mill other than your own ore? [24]

A. Well, we could have had use for it. There has been two or three people came to us and asked us to custom ore for them.

Q. Have you had offers to custom ore?

A. Yes.

Q. Is there any other mill in that locality doing milling at which custom milling can be done?

A. No.

Q. Have you had any specific offers to custom mill?

Mr. Wilmer: We object as being immaterial in this lawsuit.

The Court: He may answer.

A. Yes, we have had Mr. Seeds, who owns claims above the mill, and Mr. Austin, who owns claims about.

Mr. Cox: You may cross-examine.

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Robinson, what has been your experience in mining?

A. I was in the coal mining business in East March Chink, Pennsylvania.

Q. What did you do? [25]

A. We had a small mine, a small breaker.



(Testimony of John P. Robinson, Jr.)

Q. You say "we," who do you mean by "we"?

A. I had a partner.

Q. How long have you been in that business?

A. I have been in that business for a year and a half.

Q. That was the extent of your mining business?

A. No, I was born and raised in the coal mining business.

Q. Have you had any experience prior to coming West with respect to mining of metals?

A. No.

Q. Now, as I understand it, Mr. Robinson, you and Mr. Zannaras first came to Arizona in '39?

A. Yes.

Q. Did you stay here at that time?

A. We stayed in Yuma.

Q. Did you do any prospecting other than in Arizona?

A. Previous to that in California.

Q. And any other place?

A. No.

Q. What type of mines or claims on ores were you prospecting for?

A. At that time we was prospecting for gold or silver. [26]

Q. And did you locate any claims in Yuma?

A. Just a copper claim outside of Yuma.

Q. Outside of the City of Yuma?

A. Yes, up in the Dome Mountains.

Q. Were those diversion claims or had they been worked?

A. Part of them a little work done on them and part of them had not.



(Testimony of John P. Robinson, Jr.)

Q. Did you proceed to develop it any?

A. No.

Q. Then you came to Mohave County, is that right, or Yavapai County? A. Yes.

Q. I understand that was in the spring of '40?

A. Beg pardon?

Q. The spring of '40?

A. No, in the summer. We came in the spring first to sample the properties and then came back. It was around June, the latter part of May or the first of June.

Q. How did you locate this particular property?

A. Just by going out to examine the property.

Q. I mean, I believe you said you first became interested in the Mystery Mine?

A. Yes, we leased the Mystery Gold Mining Claims.

Q. Were those developed claims? [27]

A. Considerable development work, yes.

Q. They were not being worked? A. No.

Q. And do you know why those claims had been shut down?

A. Well, I understand they had a little mill down there. Well, it was just a kind of home made affair and they could not make recovery on it.

Q. You don't know personally what it was?

A. No.

Q. Then as I understand it, the first thing you and Mr. Zannaras did was to locate this millsite and construct a mill? A. That is right.

(Testimony of John P. Robinson, Jr.)

Q. Did you at that time know how much water there was available for milling?

A. How much water?

Q. Yes. A. There was considerable water.

Q. I say, did you know? What steps did you take to ascertain it was feasible to construct a mill?

A. Well, most of the veins show on the surface except where they are covered, and we assayed the surface, and assayed where they had done their work.

Q. In other words, you based your determination that the mill would be feasible on the veins [28] that showed on the surface?

A. And underneath.

Q. Underneath?

A. In the ground where they worked.

Q. How was that blocked out, on three sides or just one side? A. Two sides.

Q. You mean you were able to see the extent of the vein from two sides? A. Yes.

Q. I don't quite follow you. What do you mean? Did you see a vein on the face of an open cut or in the face of a cut there which determined what the extent of ore was there?

A. It is all on three sides of the cut.

Q. It is a "U" shape?

A. Part of it is "U" shape and part of it is underground.

Q. What I am trying to get at is, you look at the vein showing on the face of the cut, and based on that and on the veins on the surface of the ground, you

(Testimony of John P. Robinson, Jr.)

determined there was sufficient ore to justify erecting a mill?      A. Yes.

Q. You then started construction at what time?

A. I think it was October, '40, when we [29] started.

Q. That is when you started building the road up to the millsite?      A. Yes.

Q. How many men did you have working?

A. Five.

Q. And the water which you used at that time was sufficient for the domestic use of those men?

A. Yes.

Q. Did you have any other use for the water at that time other than to drink, take baths with or for sanitary purposes?

A. That is right, that is all we needed.

Q. Then when you had the road constructed you built this—you laid the foundation for the mill?

A. Yes.

Q. Do you recall roughly what the area of that foundation is?      A. No, I don't.

Q. Would it be—would it exceed 30 feet by 50?

A. Well, in covering the whole mill it would, yes.

Q. It is in that neighborhood. It is not a whole lot bigger than that, the foundation from the floor?

A. I don't imagine.

Q. You used water to mix the concrete for [30] the foundation and the retaining wall?

A. Yes.

Q. And for domestic purposes?

(Testimony of John P. Robinson, Jr.)

A. And for the tanks.

Q. These retaining walls are about what size?

A. Oh, some of them are six feet high.

Q. How thick?

A. Run from—some of them would be six or eight inches and some of them would be 12 inches.

Q. Those retaining walls are on how many sides?

A. The retaining walls are all on the east and on the north sides.

Q. So that you had a floor, we will say, 50 by 70, to be safe, with concrete, and you had retaining walls on two sides constructed with concrete?

A. Yes.

Q. For which you used water? A. Yes.

Q. In addition to the concrete and the domestic purposes, did you use water for any other purpose?

A. Not right at that moment.

Q. Up to that time you had used it only to make this concrete and to drink, for you and Mr. Zannaras and the other five men? A. Yes.

Mr. Cox: I didn't hear you. [31]

Mr. Wilmer: I say up to that time you had used water for making concrete, to drink and for domestic purposes for himself and Mr. Zannaras and other employees. That is correct, is it not? A. Yes.

Q. When did you first start using water for any other purpose, Mr. Robinson?

A. Well, just as soon as we started up the mine about, I don't know, we started some work, oh, from 15 or 20 days after we got out there.

Q. At which mine was that?

(Testimony of John P. Robinson, Jr.)

A. Mystery mine.

Q. How long did you work that mine?

A. Oh, I don't know.

Q. Did you produce any gold ore?

A. No, we didn't haul any down at the mill because we were still constructing the mill.

Q. Did you ever mill or otherwise dispose of any ore from the Mystery Mine?      A. No.

Q. That was abandoned?

A. That was abandoned.

Q. So what use did you make of the water in the mining operations at the Mystery Mine?

A. Just for drilling.

Q. For drilling? How much water would [32] that require?

A. I don't know—I don't know how much water a jack hammer takes.

Q. You hauled it there in tanks, did you?

A. Yes.

Q. Well, then, up to this point, you had used it for the jackhammers at the Mystery Mine and to make concrete and for drinking?      A. Yes.

Q. When did you make any further use of this water?

A. When we started on the Zanarapolis group of claims.

Q. That was in '41?

A. '41, the early part of '42.

Q. What use did you make of the water there?

A. Mining purposes.

Q. What did you use it for?



(Testimony of John P. Robinson, Jr.)

A. Compressor and jackhammers and hoist, circulating water through the hoist.

Q. You mean what water that is used in the operation of a hoist?           A. Yes.

Q. What was that used for? I am not familiar with mining.

A. For a hoist. [33]

Q. What did you use water in that for?

A. Circulating through the hoist to keep the cylinders cool.

Q. You mean for the engine?           A. Yes.

Q. Does that take an appreciable amount of water?

A. It takes quite a bit when you have it out in the tank.

Q. Those jackhammers are used in connection with drilling or mining operations?

A. On the mining operation.

Q. How much mining had you actually done?

A. The Zanarapolis group of claims, we had done——

Q. Just tell us exactly now what there appears on the face of the earth there to show there was mining operations carried on.

A. Well, I could not figure the tonnage out for you. It is all stacked out up there and I don't know the tonnage.

Q. All I want you to tell is what physical evi-



(Testimony of John P. Robinson, Jr.)

dence there is in the mining operation of the Zana-  
rapolis group.

A. Well, to begin with, the claim, we have an open  
cut.

Q. How big is that open cut? [34]

A. I don't know, 20, 30 by something, I don't  
know, I never measured it. Mr. Zannaras meas-  
ured it.

Q. I want you to tell me what your recollection  
is as to the size of this cut.

A. I don't know, possibly 20 feet by, maybe as  
much as 14 of 15 feet deep and a little cut off to the  
side of the vein three or four feet deep, probably 10  
or 12 feet long.

Q. How was that cut made; how did you make  
that cut?

A. Used a jackhammer and drilled it and plas-  
tered it and hauled it out.

Q. And the use of water, as you said, for circu-  
lating.

A. There, we didn't use the hoist, didn't need  
the hoist there.

Q. So you didn't use water there?

A. Yes, we used water for the jackhammers, do-  
mestic purposes.

Q. What other mining have you done there be-  
sides this one open cut?

A. Well, we moved to the upper end of the claims  
and we started sinking a shaft.

Q. When was that?

(Testimony of John P. Robinson, Jr.)

A. I don't know the date, '40—latter part of [35] '42, first of '43.

Q. How deep and how wide was the shaft that you have sunk there?

A. It is 8 by 10 by, around 50 feet.

Q. 8 feet wide, 10 feet high and 50 feet deep?

A. Yes.

Q. Are there more than one? A. No.

Q. And in that connection you used water for the purpose of your jackhammer and your hoist?

A. Compressor, and so forth.

Q. And compressor. But I believe you stated you operated the mill briefly in '43, is that right?

A. Before that.

Q. When?

A. I don't recall the date when we actually started. We done so much work I didn't keep track, but we hauled it down there.

Q. Let me ask you then, Mr. Robinson, since '41 to date, how many pounds of concentrates has that mill turned out?

A. I don't know. We shipped some to Tucson. We have got a lot out there. I don't know.

Q. Have you produced there over 700 pounds of concentrates? A. Oh, yes. [36]

Q. You are sure of that?

A. Oh, yes; positively.

Q. Where are they?

A. A lot of it out at the plant.

Q. What are they doing out at the mine, why haven't they been shipped?

(Testimony of John P. Robinson, Jr.)

A. That is not a very good shipment.

Q. What do you mean, it is not a very good shipment?

A. In the first place, right now Fensler refuses to buy only in carload lots. They only want it in carload lots.

Q. How long has that been true?

A. I don't know. It has been before I left; I don't know.

Q. The concentrates that you have out there were all produced prior to the time you went in the Army?

A. No.

Q. When was some produced, after you came back?

A. Yes.

Q. When?

A. I produced some just before we shut down in June, Mr. Zannaras and I alone.

Q. How much ore did you run through the mill at that time? [37]

A. That was on June 28th I run about three or four hours, something like that, and it is all down in the gauge box yet and on the concentrator tables, three or four hundred pounds of it.

Q. That was at the time in June, '48, when you operated the mill. When, previous to that, had you operated the mill?

A. Well, after I got it in operation, coming back, I run a test run, not a test run.

Q. When was that?

A. I don't know. Well, it was during the winter of '47 or '48, there in the early part.

(Testimony of John P. Robinson, Jr.)

Q. You ran a test run. How much ore did you run through?

A. I don't know; several truck loads.

Q. What happened to that concentrate?

A. We have got it.

Q. Still out there?                      A. Yes.

Q. Prior to that when was the mill operated?

A. The night before I went in the Army, before I was drafted.

Q. How long did you operate at that time?

A. Well, I don't recall. All I know is when——

Q. I want to know how long you operated prior to the time you went in the Army, your best [38] recollection?

A. I can't exactly recall. It is a very short time because at that time Mr. Zannaras and I were there alone.

Q. Do you know how many tons of ore you took out at that time?

A. No; I didn't keep track of it.

Q. What did you do with those concentrates?

A. I don't recall how much we sent to Fensler.

Q. Do you have any settlement sheets; do you have anything to show how much you shipped and what you received for it?

A. I don't know. It was only to see if there was any impurities in it.

Q. Just a small amount?

A. Just a small amount.

Q. Prior to that, had you operated the mill?

A. Well, prior to that, practically all test runs.

(Testimony of John P. Robinson, Jr.)

Q. As I understand it, then, Mr. Robinson, after you had the mill set up you ran a few test runs?

A. Yes.

Q. And then prior to the time you went into the Army you ran a small amount through which you went to Tucson to see if you had impurities [39] in it?

A. We started to run in '45.

Q. No; I asked you if, prior to the time that—well, let's get it straight. When was the first time you operated the mill to produce concentrates that you sent to Tucson?

A. I don't recall any dates on that. That is pretty far fetched to remember those dates. I can't.

Q. In '43, you shipped approximately 10 tons of ore to the Government stockpile here in Phoenix?

A. Yes.

Q. That was not put through your mill?

A. No.

Q. Was that hand-sorted ore? A. No.

Q. That was—where was it selected from?

A. Selected right out of a three-foot vein.

Q. Where?

A. In the shaft where I worked.

Q. Now, during all of this period of time there was plenty of ore there? A. Plenty of ore.

Q. Now, I understand you to say you came back. What was Mr. Zannaras doing during the time you were in the Army?

A. I don't know, I didn't keep track of him.

Q. Do you have any particular skill that is [40] required in the operation of that mine out there?



(Testimony of John P. Robinson, Jr.)

A. I don't know.

Q. I mean, do you have any particular skill that could not be replaced by any other person who has had experience in the mining that you have?

A. No; I guess not.

Q. Now, from the period of time in '45 up to the time you returned from the Army, was the mill operated?

A. No; not that I know of; might have been a little.

Q. You don't know if it was?                      A. No.

Q. Plenty of water at that time?

A. I wouldn't know.

Q. Now, I understand you to say, Mr. Robinson, that there was no water in Burro Creek through July, August, September and October of '48?

A. That is right.

Q. How many floods did they have down there, down in Burro Creek during that time?

A. None.

Q. Were you there all the time?

A. I was there all the time except a day's trip to Phoenix.

Q. Are you familiar with the records of the [41] Government at the gauging station that is maintained there at Burro Creek?                      A. No.

Q. Do you know there is such a station there at Burro Creek?                      A. No; I do not.

The Court: We will have a brief recess at this time.



(Testimony of John P. Robinson, Jr.)

(Thereupon, a short recess was taken, after which all parties as heretofore noted being present, the trial resumed as follows.)

Q. (By Mr. Wilmer): Mr. Robinson, is there any water up there now?

A. I don't know, I haven't been up there since December.

Q. Has Mr. Zannaras been up there?

A. Yes; as far as I know.

Q. Well, as a matter of fact, have you discussed with him the matter of reopening the operation of the mill?

A. I haven't had time to discuss that with him. I just got into Phoenix this morning.

Q. Well, did you leave him with the understanding you would return when there was adequate water for your milling operations?

A. Well, just as soon as I can get on my [42] feet again a little bit.

Q. You say, Mr. Robinson, that you are competent to express an opinion as to the proper construction of that mill up there and can state whether or not it was an efficient and economic operation?

A. Well, it is efficient for getting concentrates.

Q. I asked you if you feel that you have the qualifications and the background to justify your stating that the mill is an efficiently operated and/or can be efficiently operated? A. Yes.

Q. You have that experience. Is it true, Mr. Robinson, that——

(Testimony of John P. Robinson, Jr.)

Mr. Cox: Just a moment. What was that again, you had any experience——

Mr. Wilmer: I asked him if he had enough experience to justify him stating that it was an efficient operation. He said he did.

Mr. Cox: I mean your last statement. He started to answer it.

Mr. Wilmer: I am sorry. Did I understand you to say you are qualified, Mr. Robinson, to state that the mill is properly and efficiently constructed? [43]

A. A mill like that, yes.

Q. Is it good practice to operate a mill of that character without a classifier?

A. We are going to get a classifier.

Q. You don't have a classifier yet? A. No.

Q. What provision have you made there for amalgamation?

A. Got a Gibson Impact Amalgamator.

Q. Where is that?

A. 12 by 18 mineral jig is right after the ball mill, but the Gibson Impact Amalgamator sets directly, I will say, facing to the lower side of the mill, to the left side of the mineral jig.

Q. You state that the engine there is in condition to operate there at the present time?

A. I don't know; I have been gone since October.

Q. You say that in the use of a jackhammer and the hoist that you use over 100 gallons of water a day, Mr. Robinson?

(Testimony of John P. Robinson, Jr.)

A. Well, the jackhammer alone uses as high as, let's see, 6,000 gallons, that would be 500 gallons.

Q. 500 gallons in a jackhammer one day?

A. Yes.

Q. Do you run a jackhammer?

A. Yes. [44]

Q. How much experience have you had running a jackhammer?

A. I have run one for seven years.

Q. And you say that a fellow who knows his business of operating a jackhammer without wasting or throwing water away would use 500 gallons a day?

A. It is not a point of throwing it away; we don't throw it away. We use it for wetting the ore down. We need sufficient water.

Q. This 10 tons or so of ore that you shipped to Phoenix to a stockpile, that was all the ore that you shipped to the stockpile? A. Yes.

Q. The Government during the war was very desirous of getting additional supply of tungsten, was it not? A. Yes.

Q. Why did you not ship additional ore to the stockpile?

A. Our contract called for 3,000 tons. We were trying to get our shaft down to where we could stope out and get a sufficient shipment to make up the 3,000 tons over a period of time.

Q. Why didn't you get it out?

A. Well, it is one of those things; you don't [45] finish it up in one day. We don't work on a half

(Testimony of John P. Robinson, Jr.)

million dollar budget, or something like that. We are small people, small operators.

Q. How long did it take you to accumulate those 10 tons you shipped? A. 10 tons?

Q. Yes.

A. I took it out myself in a day and a half.

Q. What kept you from taking out another 10 tons in another day and a half?

A. Because, we took it out and stacked it out there and run it through the mill; was going to start the mill.

Q. Why didn't you run it through the mill?

A. Because the water was polluted at Bagdad.

Q. Because the water was polluted at Bagdad?

A. Yes.

Q. Why didn't you continue to ship from the stockpile?

A. Because by running our own ore we could make more money.

Q. When the water, as you claimed, became polluted, why, you then could have continued to ship the ore to the Government stockpile, could you not?

A. I was drafted in the Army. [46]

Q. Well, you mean that you were drafted in the Army in '45, weren't you?

A. That is correct.

Q. What did you do between '44, when you say the water became polluted, until the summer of '45?

A. We was doing development work to get down to——

Q. You mean when the war was going on and

(Testimony of John P. Robinson, Jr.)

the Government needed this ore and you had it lying on the ground that you didn't ship it?

A. No.

Q. Why didn't you do it?

A. We could not, that is all.

Q. I understood you to say you took out 10 tons yourself in a day and a half? A. I did.

Q. Why didn't you take out another 10 tons in another day and a half? A. I was unable to.

Q. Why? A. Sickness; timbering and all.

Q. What kept Mr. Zannaras from doing it?

A. He can't very well operate a hoist all alone and climb up out of the ground and do it all alone.

Q. Did you have any trouble——

A. He can't even drive a truck. [47]

Q. Did you have any trouble getting the five men that built the road out there?

A. That was before war time.

Q. You could have found a man to take your place? A. Not in the war time.

Q. You told me those 10 tons of ore you shipped down to the stockpile had been hand picked?

A. No.

Q. What additional timbering did you have to do at that time? A. We had just started.

Q. In '44 the shaft that you speak of was at its present depth, was it not?

A. In '44? No; it could not have.

Q. How much did you put down since you came back?

A. I don't know; about 20 or 22 feet.



(Testimony of John P. Robinson, Jr.)

Q. Do you remember, Mr.——

Mr. Cox: I didn't hear the answer.

A. About 20 to 22 feet.

Q. (By Mr. Wilmer): Do you remember this gentleman sitting at the table there, of the United States Geological Survey, coming up there in '44?

A. Yes.

Q. What, if any, changes have you made in the shaft since the day he was out there? [48]

A. It was deeper.

Q. How much deeper? A. 22 feet.

Q. You mean you deepened it 22 feet since?

A. I have not been there. I came back in '47.

Q. It has been deepened 22 feet? A. Yes.

A. What has been done with the ore?

A. What has been done with the ore?

Q. Yes. A. We started to mill it.

Q. Where is the ore you started to mill there now? A. Most of it is setting in the bin yet.

Q. Now, Mr. Robinson, as I understand this, you took out a 10-ton slug of ore in a day and a half; you had the shaft timbered? A. No.

Q. You did not? How long does it take you to timber down—what keeps you from going down with the timber?

A. Well, in the first place, we had to get priority and that took, I think——

Q. To do what?

A. Two months there getting——

Q. To get what type of priority? [49]



(Testimony of John P. Robinson, Jr.)

A. To get priority to buy anything during the war.

Q. What did you have to buy?

A. What did we have to buy? Lumber, and had to wait and find it.

Mr. Wilmer: That is all.

Redirect Examination

By Mr. Cox:

Q. After you got your water permit, how much of the time did you run your pump before you got your certificate of water right?

A. Oh, it run almost every day.

Q. What equipment other than the mill has been placed on the millsite or on the claims?

A. Equipment?

Q. What other equipment in getting—you have obtained what other equipment other than the mill and put on all the claims at the mine?

A. At the mine?

Q. Yes.

A. Well, all the mining equipment, hoist—

Q. I can't hear you.

A. The mining equipment, all the mining equipment, transportation, the hoist and the jackhammer, picking belt, dark room, mineralight for [50] picking the waste out of the bulk, and mining cars, rails, skips, tripod, solid frame; got a laboratory house.

Q. Any other equipment?

(Testimony of John P. Robinson, Jr.)

A. No—a truck, got a large truck, got a 50-ton Army truck, one we bought from the War Assets Administration.

Q. And all of that has been—the equipment was obtained in the interim in preparing to operate?

A. Yes, sir.

Mr. Cox: That is all.

### Recross-Examination

By Mr. Wilmer:

Q. This water that you say you used in mining the Mystery Mine, that came from Burro Creek?

A. Yes.

Q. I believe you and Mr. Zannaras had a lawsuit with a rancher up there over a well, did you not? A. Yes.

Q. Litigation over the ownership of a well, which was a well that had been there for many years. Why did you want the water from that well?

A. Why?

Q. Yes.

A. Because on a mining property you don't [51] care to have anybody sitting there with so-called rights through a period of years.

Q. Well, now, this well is on the road into your property, is it not? A. Into the mine, yes.

Q. Into the mine. About how far is it from the mine?

A. From the mine it is just a little bit over a mile, a mile and two-tenths.

(Testimony of John P. Robinson, Jr.)

Q. A mile and two-tenths, and this was a rancher's well sitting in the wash there, is that right? A. No; it is a miner's well.

Q. Why do you say it is a miner's well?

A. Because it was put there by miners.

Q. When?

A. Oh, I don't know, around 40 or 50 years ago.

Q. How big a well is it? A. About 3 by 4.

Q. And that is how far from Burro Creek?

A. That is around 10 miles.

Q. And you say your reason for taking this well away from this fellow up there is because you don't want any——

Mr. Cox. I object to the form of the question.

Q. (By Mr. Wilmer): You had a lawsuit over it, didn't [52] you? A. Yes.

Q. You now have the right and use of the well and he does not, that is right? A. Yes.

Q. What do you use the water for?

A. It is not good for anything.

Q. Why did you want to get prior right to use it; what was your interest in it if you don't have any use for it?

A. I told you we didn't want anybody on the property holding rights on the property.

Q. This well that you speak of presently has a pump in it, does it not?

A. Yes; we put one up there expecting to pump it dry, clean it out and maybe could use the water. We had to do that to clean it out. You can't bucket it out; it is too tedious a proposition.

(Testimony of John P. Robinson, Jr.)

Q. At any rate, you have a well that has a pump in it and a pipe that comes from it leading into the tank? A. Yes.

Q. Do you use any Hillside water for mining operation? A. Any Hillside?

Q. Yes. [53]

A. Yes; right out of the railroad tank.

Q. That water you didn't use from Burro Creek?

A. No.

Q. You use any water from Pike's place?

A. Yes.

Q. That didn't come out of Burro Creek?

A. No.

Q. How much water will this pump of yours in Burro Creek produce a day; how much will it keep up in haul to the tank?

A. I couldn't tell you. I couldn't figure it out.

Q. Did I understand that from the time you installed that well, or, rather, installed that suction in the creek bed and put in your pump and pipeline up the hill that you ran the pump continuously, every day?

A. We ran it—we had to run it. When we'd take it out of the tanks we had to replenish it.

Q. How much storage do you have up there?

A. We have 14,000 gallons.

Q. You had to fill it up every day?

A. Keep it full.

Q. You mean you used 14,000 gallons every day?

A. No; we didn't use 14,000 gallons every day. We used, I don't know how many thousands of gal-

(Testimony of John P. Robinson, Jr.)

lons. [54] I don't know how many. I know we have a thousand-gallon tank that we put on the back of a truck and we make seven, eight or ten trips with it.

Q. To where?           A. To the mine.

Q. Every day?

A. Yes; we use it to wet down rock.

Q. Now, you mean you have been mining every day with that much water since you were up there?

A. No; some days we would use that and some days more.

Q. How long would it take you to put down this open, or this cut you speak of you have?

A. I don't know. I worked—had another man working with me; I don't know how long he was there. That was before we put up the house out there and we opened in the open cut.

Mr. Cox: I don't think anything has been brought out here, or brought out on redirect.

Mr. Wilmer: Well, I was interested in his saying he ran the pump every day.

The Court: Go ahead.

Mr. Wilmer: I think that is all.

### Redirect Examination

By Mr. Cox:

Q. This well that Mr. Wilmer brought out, [55] is there water in that well?           A. A little bit.

Q. And the water that you got from Hillside, and where else did you say?



(Testimony of John P. Robinson, Jr.)

A. From Pike's place and from Wickenburg.

Q. Hillside, Pike's place and Wickenburg, was that before or after the water in Burro Creek became polluted? A. That was after.

Mr. Cox: That is all.

### Recross-Examination

By Mr. Wilmer:

Q. Well, do I understand, Mr. Robinson, that this water in Burro Creek was polluted to the extent where you could not use it for wetting down the ore when you were using the jackhammer?

A. We could not pump it, ruin our pumps. We had liners out; was out of the pumps; could not keep them in.

Q. This diversion point of yours is approximately eight or nine miles below Bagdad?

A. About eight miles.

Q. About eight miles?

A. Somewhere in that neighborhood; I never measured it. [56]

Mr. Wilmer: That is all.

(The witness was excused.)

JOHN PHILLIP ZANNARAS

was called as a witness in his own behalf, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Cox:

Q. State your name.

A. John Phillip Zannaras.

Q. Where do you live, Mr. Zannaras?

A. I live at the mine.

Q. And where is that?

A. It is about four miles from Congress.

Q. On Burro Creek?

A. Near Burro Creek.

Q. What is your occupation?

A. I am a registered mining engineer.

Q. Are you duly licensed and authorized to practice professionally within the State of Arizona as a mining engineer?

A. Yes.

Q. Do you use the title and seal of a registered mining engineer?

A. Yes. [57]

Q. Has the State of Arizona Board of Technical Registration for Architects, Assayers, Engineers and Land Surveyors passed upon your qualifications as a registered mining engineer?

A. Yes, sir.

Mr. Wilmer: Just a moment. I move to strike that on the ground that the law provides how a mining engineer gets registered, by the testimony of one mining engineer and submitted two references. He asked if the Board has passed upon his qualifications. There is no qualifications necessary.

(Testimony of John Phillip Zannaras.)

The Witness: There is an examination on the subject. You have to be examined by the Board of Technical Registration.

The Court: Who examined you?

A. The Board of Technical Registration.

Q. Where? A. Three years ago.

Q. Where?

A. It was at the Phoenix Junior College. I passed a written examination.

Q. Who gave you the examination?

A. The Board itself; the engineer who gives you a written examination.

Q. Who was the engineer that was appointed?

A. Well, the Board appoints one at that [58] time. I don't know who he was. I only received questions in writing and I have to pass the examination.

The Court: Go ahead.

Mr. Cox: Did you receive a certificate from the Board?

A. I did.

Q. What is the number of your certificate?

A. 1269.

Q. Are you a member of any technical engineering societies? A. Yes.

Q. What?

A. The American Institute of Mining and Metallurgical Engineers.

Q. What education have you had?

A. I am a graduate of Lehigh University.

Q. What is your degree?

(Testimony of John Phillip Zannaras.)

A. My degree was Naval Engineering.

Q. In receiving your degree did you take all of the usual pre-engineering and engineering courses?

A. I did.

Q. Did you take any course in metallurgy in that engineering course?

A. I did take a course in metallurgy. [59]

Q. Under whom did you take your metallurgical course?

A. I took that from Professor Bradley Stoughton.

Q. Who was he?

A. He is the outstanding authority on metallurgy.

Q. After you graduated from college, what did you do?

A. I was employed as an engineer by the Babcocks & Willcox Company.

Q. What was the nature of your duties with this company?

A. I was an engineer designing machinery for power plants.

Q. How long were you with Babcocks & Willcox?

A. About three years.

Q. After Babcocks & Willcox, what did you do?

A. I was working for the Texas Gulf Sulphur Company as a contractor.

Q. When did you come West?

A. I came West in '38.

Q. And were you contracting in the sulphur in that period between the Babcocks & Willcox and the

(Testimony of John Phillip Zannaras.)

time you came West?           A. Yes, sir.

Q. And what was the nature of your duties [60] in the sulphur?

A. We were handling the sulphur transportation from Galveston, Texas, to the Atlantic Seaboard, Baltimore, Boston, and other places, and our duties was, I was engaged in the materials handling problem.

Q. Did you have a boat?

A. We had our own boat.

Q. You say you came West in '38. What was the purpose of coming West, Mr. Zannaras?

A. I was going to engage in mining, in mining. I was going to find a mining property and build a mill.

Q. Did you find a mining property?

A. We finally did find one.

Q. At your present location?           A. Yes, sir.

Q. What did you do there; first, what did you do when you first found that?

A. We put up a millsite and we applied for water rights because we have to have water. Without water, of course, we couldn't do nothing.

Q. Did you investigate anything concerning that water?           A. I did.

Q. Did you locate—you say you located a [61] millsite. Did you locate any mining claims in that vicinity?

A. We located mining claims in the later time.

Q. What type—did you acquire any claims there or the rights to use any claims?



(Testimony of John Phillip Zannaras.)

A. Yes; we leased the Mystery Mines.

Q. And did you—after that time, did you acquire any yourself?      A. Yes, sir.

Q. How many mining claims did you acquire?

A. We have a number of mining claims and have got the Zannarapolis Claims from 1 to 34.

Q. 1 to 34?

A. 34, and also Electro Mining Claims 1 to 4, and some others.

Q. You have some other claims there also?

A. Yes.

Q. Are those patented or unpatented claims?

A. They are unpatented claims.

Q. Unpatented claims?

A. Unpatented claims, eight of them are under patent now.

Q. When did you locate your millsite there?

A. Some time in December, '40.

Q. And after you located that, did you work the Mystery Claims? [62]

A. We did some work on the Mystery Claims.

Q. Did you ever take any gold out of the Mystery Claims?      A. No; we didn't.

Q. What ores have you located on the claims that you now have?

A. We have located tungsten, copper and gold.

Q. When did you start constructing your mill?

A. We started constructing our mill some time in October, '40.

Q. What does your mill now consist of?

A. Our mill consists of two tanks, one smaller

(Testimony of John Phillip Zannaras.)

tank and a 20-ton bearing and feeder, three by seven and a half ball mill, section classifier, Duplex Denver Jig, 50-ton Gibson Amalgamator, primary concentrator table, secondary concentrator table, and a seven-gallon capacity tank used for a thickener.

Q. Seven gallons?           A. 7,000 gallons.

Q. What type of milling is the mill designed to do?

A. The mill is designed for gravity concentration, for flotation and also for amalgamation and cyanidation.

Q. When did you first operate your mill? [63]

A. We run some test in December, 1941.

Q. What did you do after your trial test in the summer of '41?

A. We improved the mill, discovered that tungsten veins required about—we extended the gravity construction, recovery, so we installed an additional concentrator tables and also the jig.

Q. And then what did you do?

A. Then we—in the fall of '41, that was when we located mining claims, tungsten mining claims, and we started developing those mining claims.

Q. You say it was after that that you did this work on the mill?

A. Yes; after we located tungsten claims.

Q. Now, about when was it then that you finished up the work on the mill?

A. Well, the mill was December, '42, I should say, the mill was ready for milling by gravity.

Q. And what did you do after that?

(Testimony of John Phillip Zannaras.)

A. We worked at our own claims, developing our own ores.

Q. And did you develop any ore there?

A. Yes, sir.

Q. How long did it take until you developed the tungsten claims until you had ore available?

A. We had ore available immediately, as [64] soon as we stepped in the place, because the ore is on the surface and it can be removed and milled.

Q. When did you start taking the ore from the tungsten property, do you recall, about?

A. Some time in '42, took a few tons for testing purposes.

Q. Then what did you do?

A. Then we keep developing the place with the object of milling at the same time the ore that we developed.

Q. Had you gone to any full-scale operation of the mill at all at that time, hired any men?

A. Not for the—we ran tests continuously with the mill.

Q. You mean you ran the mill continuously?

A. Not continuously, but I mean very regularly until we adjusted the thing and ran trials.

Q. You say you got the mill ready to develop so that it could run ore?

A. Yes, sir.

Q. And about when was that—now, did you say the latter part of '42?

A. No; the summer of '42.

Q. The summer of '42. You have a bin at that mill, you say?

A. Yes, sir. [65]

(Testimony of John Phillip Zannaras.)

Q. Did you fill the bin? A. Well, almost.

Q. When was that?

A. No; we didn't fill the bin. I remember the bin was not filled. In '42 we took a few tons run for test purposes.

Q. What work did you do after that?

A. We developed the mine.

Q. In what way?

A. We started an open cut at Claim No. 19 and then we made a new road and we moved in another part of the claims, on Claim 28, where we started a shaft.

Q. Now, first, the ore that is being spoken of from the shaft, the ore that was spoken of that was sold, is that the shaft you are speaking of?

A. I didn't get the question.

Q. I will withdraw it. You say you started a shaft on Claim 19?

A. No; we started an open cut on Claim 19.

Q. And the shaft? A. On No. 28.

Q. When was that; about when?

A. Some time probably the end of '42 to '43, maybe '43.

Q. Did you find a good grade of ore or [66] profitable ore on that Claim 28?

A. We did; yes, sir.

Q. Did you take any ore from that or sell any ore? A. We took 10 tons to be stockpiled.

Q. I show you Plaintiffs' Exhibit 7 in evidence and ask you if that is a return from the Metals Reserve Company on the ore? A. Yes, sir; it is.

(Testimony of John Phillip Zannaras.)

Q. Now, this return, does that show the percentage of tungsten in the ore? A. It does.

Q. And what percentage does that show?

A. It says 1.2 per cent  $WO_3$ .

Q. 1.92? A. 1.92 per cent.

Q. I didn't hear the "9."

A. .92 per cent.

Q. What does that mean, Mr. Zannaras?

A. It means that in one ton of ore there is approximately, I should say, about 38 pounds of tungsten trioxide.

Q. Is that what  $WO_3$  is? A. Yes, sir.

Q. In other words, then, this 1.92 per cent on 2,000 pounds is tungsten trioxide? [67]

A. That is right.

Q. And where did the ore come from that went to that stockpile?

A. It came from the shaft of No. 28 claim.

Q. Now, is the 1.92, is that—withdraw that. You had a return from that 10 tons of ore?

A. Yes, sir.

Q. And would it be more profitable to ship the ore unmilled, or to first mill the ore?

A. It would be much more profitable to mill the ore.

Q. Why?

A. Because, first, there are freight charges and treatment charges of \$12.60 per ton, and also there is transportation from the mine down to the stockpile, which is a considerable amount, I should say close to \$8 a ton.



(Testimony of John Phillip Zannaras.)

Q. From your experience in engineering as a registered mining engineer, would you say that the percentage shown on that ore sold at the stockpile is a fair average of tungsten content for ore that could be expected to be milled from the shaft?

A. No.

Q. Why?

A. Because this was taken from a vein which is more selected ore. This was the most selected [68] ore of a big tungsten vein which is there.

Q. In other words, this is taken directly from the vein itself?

A. From the vein itself, but there is lower grade ore on the side of this vein.

Q. What would you say would be a fair percentage average—average ore from the workings there on Claim 28?

A. I should say about 1 per cent.

Q. After you had developed this shaft or started this shaft and made an open cut, did you operate your mill?

The Court: Well, we won't go into that until after lunch.

Mr. Cox: Oh, is it twelve?

The Court: The Court will suspend at recess until 2:00 o'clock.

(Thereupon, a recess was taken at 12:00 o'clock noon.)

(After recess, all parties as noted by the Clerk's record being present, the trial resumed as follows.) [69]

JOHN PHILLIP ZANNARAS

resumed the witness stand and testified further as follows:

Direct Examination

(Resumed)

By Mr. Cox:

Mr. Cox: I believe it is a question that has been asked. Would you read the question, Mr. Billar?

(Thereupon, the question was read by the reporter.)

A. By that time the water was polluted in Burro Creek and we could not operate the mill.

Q. When was that, now? A. Around '44.

Q. Did the water clear up in Burro Creek at any time after that?

A. It cleared, I should say, about the fall of '45.

Q. Did you operate the mill then?

A. By that time Mr. Robinson was in the Army and I couldn't find any men, you see, to hire and replace Robinson, so I did not operate.

Q. When did Robinson get out of the Army?

A. He got out of the Army in '47, summer of '47.

Q. When did he go back to the mine?

A. He came to the mine immediately.

Q. And what did you do then? What did you and Robinson do then? [70]

A. We built a laboratory across from the house where we lived.

Q. Had Robinson and you been in that country before this?

(Testimony of John Phillip Zannaras.)

A. We had some other holdings there.

Q. Are either of you married?

A. Mr. Robinson got married and he had two children; one child, I think, on one side.

Q. Did his wife live at the mine, or where did she live?      A. She lived at the mine.

Q. Had she lived at the mine before he went to the Army?

A. No; he got his wife from the other side. He was single when he left this country.

Q. He was single when he left this country?

A. Yes.

Q. And you say when he got back you built a laboratory?      A. Yes.

Q. Then what did you do, or how long did that take?

A. Well, it took us about two months, a little bit more than two months.

Q. Then what did you do?

A. Then we started overhauling machinery at the [71] mine and at the mill.

Q. What did you do then?

A. Then Mr. Robinson had to come to town again because his wife was going to have a child, and he spent about two months here in Phoenix; her case was a little bit more different, was serious, and I had to be deprived of Robinson for almost two months.

Q. Then when he got back what did you do?

A. We start over again at the mine and at the mill.

(Testimony of John Phillip Zannaras.)

Q. Now, that was in about what time of the year?

A. Well, it was probably in March. In March we started over again and developed the mine.

Q. You mean March of what year?

A. '48.

Q. And when did you finish that work?

A. Some time by June, by June, '48, we already had a working shop and carried the ore to the mill to mill it.

Q. Did you start your milling?

A. We did start the milling.

Q. When?

A. In June, June 28th—no; June of '48.

Q. How long did you run?

A. Not more than a couple of hours. [72]

Q. Why did you stop then?

A. Because, for lack of water.

Q. Had you run the mill in between the time you had the original test run of the mill in June, '48?

A. We run the mill many times.

Q. Did you get any concentrates from those runs?

A. We did.

Q. Have you sold those concentrates?

A. No; except a very small lot.

Q. What is the capacity of that mill?

A. 50 tons per 24 hours.

Q. Do you know what the market price of tungsten is or was from June, 1948, up until—

A. Twenty-eight and one-half dollars per unit.

Q. A unit is how much?

(Testimony of John Phillip Zannaras.)

A. Was 20 pounds. That is for 60 per cent WO<sub>3</sub>.

Q. Has the water come back into Burro Creek since that time? A. It did.

Q. When?

A. About December, about December 2nd, I should say.

Q. Where was Robinson when the water came back? A. Oh, he was in California.

Q. Now, how has the water been since December? [73]

A. Well, during December we were not quite through; we was going to have another shortage or not of water and by January, that was very plain that we have plenty of water.

Q. Did you operate any in January—was Robinson back?

A. No; I had men there but I didn't operate because the weather was bad, had a lot of snow and couldn't move out during January, the weather was very bad.

Q. Have you had any men at the mine since then? A. Yes; I had two men at the mine.

Q. And when did they go to work?

A. Well, about eight or ten days ago.

Q. And what are they doing?

A. They are sinking a shaft.

Q. On contract or by the hour, or how?

A. By the foot.

Q. By the foot. Did you have ore available to operate the mill to capacity? A. Yes; I do.

Q. And where did you have that ore available?



(Testimony of John Phillip Zannaras.)

A. I have ore at the shaft and also at the open cut on Claim No. 19.

Q. I believe you testified that the ore at the shaft, in your opinion, would run what [74] percentage, did you say?

A. I did not testify to that. I don't think I did.

Q. I thought I asked on Exhibit 7.

A. Oh, from the shaft?

Q. Yes.

A. Yes; it run about 1 per cent. I expect it ran 1.94.

Q. .92, isn't it?

A. 1.92, and I testified that in my opinion the entire shaft would run about 1 per cent WO3.

Q. What about the ore from the open cut?

A. The ore from the open cut, it can be mined selectively and supply the mine with ore of 1 per cent WO3.

Q. You say "selectively"?

A. Selectively, yes.

Q. Will the ore run 1 per cent, I mean this mine run?

A. No; it will run one-half of one per cent.

Q. But selectively, in your opinion, it would run 1 per cent of the mill?      A. Yes, sir.

Q. How much would be the content, the tungsten content, of one day's run, full run of the mill?

Mr. Wilmer: May it please the Court, I [75] object to that——

The Court: That would depend upon the quality of the ore.

(Testimony of John Phillip Zannaras.)

Mr. Cox: He just testified 1 per cent ore, on this 1 per cent ore——

Mr. Wilmer: Well, if it please the Court, anyone that has ever been near a mine knows that no one can look at a piece of ore and say this will produce so much material in a given day.

The Court: I can agree to that, but he is asking about certain ore.

Mr. Cox: I am asking about this particular ore.

The Court: Go ahead.

A. That ore would run 1 per cent of  $WO_3$  and if we have 50 tons, it will produce 1,000 pounds of  $WO_3$  tungsten trioxide.

Mr. Cox: And is there a loss, any loss in recovery in milling?

A. Yes; a very fair average is about 20 per cent loss. That is, we are going to have 80 per cent recovery of ore.

Q. And you say the price of tungsten was \$28.50 a unit?

A. Yes.

Q. A unit is 20 pounds?

A. 20 pounds. [76]

Q. Then if you had 80 per cent recovery, it would make 800 pounds recovery, is that it, out of the 1,000?

A. Yes.

Q. That would be the gross, then, recovery from the tungsten through the mill?

Mr. Wilmer: Just a moment. May it please the Court, I object to any testimony at least until there is a further foundation shown as to what possibly

(Testimony of John Phillip Zannaras.)

they could have made out of the operation of this mine and mill.

The Court: It doesn't mean very much if he doesn't say how much ore was blocked out. Maybe he only had enough for one day's run.

Mr. Cox: I may be going at it backward.

Q. What ore is there blocked out there, Mr. Zannaras?

A. In the open cut there is a considerable amount of tonnage is already blocked out in the open cut.

Q. How much would you say—do you want a pencil?      A. Yes; I would like to have a pencil.

(Thereupon, a pencil was handed to the witness.)

A. I estimate that there are about 100,000 tons of ore blocked out at the open cut. [77]

Mr. Wilmer: May I ask a question on voir dire?

Mr. Cox: Certainly.

The Witness: On what?

Q. (By Mr. Wilmer): As I understood, this open cut is just a cut into the face——

A. It is a hill which has been cut on the side and exposed the ore.

Q. How far does this cut go into the hill?

A. It runs about 40 feet wide and it runs about 70 feet long and about 50 feet in depth. The highest spot from the hill back——

Q. Would you step to the blackboard and give

(Testimony of John Phillip Zannaras.)

us a diagram of how that is there? I don't understand you.

The Court: You'd better wait until he finishes.

Mr. Wilmer: All right, I will withdraw that.

The Court: Let counsel finish first.

Mr. Cox: Then what ore is there at the shaft, Mr. Zannaras?

A. At the shaft, the entire shaft is ore, so we keep on taking out all of the profit—from the shaft is ore.

Q. You mean to say the shaft is now open?

A. Yes; the dimension of the shaft, 8 by 10, is all ore.

Q. And do you have any way of ascertaining as [78] to whether that is a shallow vein or whether it is deep; do you have any way of determining that—just yes or no?

A. Well, I can't answer it yes or no, see? There is very strong indication, I mean, geological indication, but, of course, unless you diamond drill something you can't tell.

Q. What are the indications as to whether it is deep or shallow?

A. It is deep seated origin, because we could take from the other mines, other mines from the same depth, we can very well estimate the amount.

Q. Is it deep or shallow?

A. Indications are it is deep seated origin.

Q. Now, when you located your millsite and applied for a water right, did you ever obtain a certificate of water right? A. I did.

(Testimony of John Phillip Zannaras.)

Q. I show you Plaintiffs' Exhibit 1 for identification and ask you if this is a certified copy of your certificate of water right? A. It is.

Mr. Cox: We offer it in evidence.

Mr. Wilmer: It has been admitted in evidence once.

Mr. Cox: No, no. [79]

The Court: All right, it may be received.

(Thereupon, the document was received and marked as Plaintiffs' Exhibit 1 in evidence.)

Mr. Cox: If you operated the mill with the ore from your claims, what would your expense per day be, Mr. Zannaras, exclusive of depreciation and depletion expense, what would your running expenses be?

A. You mean per ton of ore, you want that figured per ton of ore?

Q. Or per day, per ton of ore then, whichever way you want to give it. A. Per ton of ore?

Q. All right.

A. I figure in the shaft it will cost us four dollars per ton to mine the shaft. In the open cut it would be much cheaper. I could estimate about \$1.50 at the open cut and it will take one dollar for transportation to the mill, and one dollar per ton for milling the ore.

Q. You compute this roughly at six dollars per ton? A. Six dollars per ton.

Q. Have you had any other use for your mill other than for milling your own ore?



(Testimony of John Phillip Zannaras.)

A. Yes, sir. [80]

Q. What opportunity have you had to use your mill?

A. For custom milling.

Q. Have you had any offers to custom mill?

A. Many people talked to me about custom milling.

Q. And do you know the price of custom milling?

A. Yes, sir.

Q. And what, in that locality, is a reasonable price for custom milling ore?

A. I should say the minimum price should be five dollars per ton.

Q. Do you do any custom milling?

A. No.

Q. Have you done any?

A. No.

Q. Why?

A. Because I figure it is much more profitable to work our own mine than to custom milling.

Q. Why don't you work your own mine and run custom milling at the same time?

A. We couldn't do that because we have to mill as we develop.

Q. On June 28th, you say there wasn't water in the Burro Creek?

A. No. [81]

Q. You have seen the photographs, Plaintiffs' Exhibits 2, 3, 4, 5 and 6?

A. I did.

Q. When these pictures were taken, was there water being taken from Burro Creek by the defendant, Bagdad Corporation?

A. I should say all of the water was taken from Burro Creek.

(Testimony of John Phillip Zannaras.)

Q. Plaintiffs' Exhibit 6 in evidence, which way—where is upstream?

A. Upstream is the upper part of the picture.

Q. And downstream?

A. Downstream is the lower part of the picture.

Q. Was there any visible water running past the Bagdad sump?           A. Not at all.

Q. Is the Bagdad sump a manufactured or constructed sump, or is it a natural sump?

A. It is a natural sump.

Q. What were you using water for at Burro Creek prior to the pollution and drying up of Burro Creek?

A. We were using it for mining purposes and for domestic purposes and milling purposes.

Q. Had you at any time abandoned the use of water granted you under the water right of the State of Arizona on January 2nd, 1945? [82]

A. I never abandoned the water, not even the locality on my place.

Q. Did you obtain water from any other source other than from Burro Creek?

A. We obtained water from Wickenburg, from Hillside, from Pike's Place.

Q. How far is Wickenburg from your place?

A. Oh, about 70 miles.

Q. How far is Hillside?

A. About 45 miles.

Q. How far is Pike's Place?

A. About 25 miles.

(Testimony of John Phillip Zannaras.)

Q. And what was the use of water—for what purpose did you obtain your water from there?

A. For domestic purposes mainly.

Q. Did you obtain any water from there prior to the pollution of the stream by Bagdad?

A. No; never.

Q. Did you at any time have a definite offer to custom mill ore for any price?      A. I did.

Q. From whom?

Mr. Wilmer: That is immaterial, if the Court please. We object on that ground.

The Court: The witness has just said he would not do that anyway. What difference does it [83] make?

Mr. Cox: It goes to the measure of damages.

The Court: I know, but your witness said a moment ago he would not custom mill ore, preferred to mill his own ore, so what difference does it make?

The Witness: I don't mean I wouldn't custom—

The Court: Just a minute.

Mr. Cox: If the Court please, the measure of damages—it is for a smaller amount than the amount shown by milling his own ore.

The Court: What difference does it make? He said he wouldn't do it. You remember he just testified to that. All right, then.

Q. (By Mr. Cox): Had you observed the flow of Burro Creek prior to the time that Bagdad put in the pump shown on Exhibit 2, the picture of their pump?      A. Yes, sir; I did.

(Testimony of John Phillip Zannaras.)

Q. Was there any time up until the time that they put in their pump that there was no flow in Burro Creek?

A. No; there was always a flow in Burro Creek.

Q. On the day that you took these pictures, or Mr. Robinson took the pictures, did you observe Burro Creek above the Bagdad diversion point?

A. I did. [84]

Q. Was or was not Burro Creek flowing then?

A. There was plenty of water flowing in Burro Creek.

Q. Did you observe the water that was going into the tank shown in Plaintiffs' Exhibit 3 in evidence?

A. Yes; I did.

Q. Was there or not water flowing into the tank?

A. It was, and it is showing in the picture, too. It can be seen in the picture.

Mr. Cox: That is all.

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Zannaras, I believe you said that you graduated from Lehigh in 1927 with the degree of Naval Engineering?

A. '24—in '24 I graduated.

Q. You said you had some courses in metallurgy? A. Yes, sir.

Q. How were they related to Naval Engineering?

A. Well, I took some other courses in reinforced

(Testimony of John Phillip Zannaras.)

concrete, and it was not related. I don't see why one course would be related to the other.

Q. Did that have reference to the recovery of gold and silver and similar ores from ore [85] bearing such minerals?

A. That is mineral dressing. It was not mineral dressing.

Q. It had relation to the refined metals, did it, such as silver?

A. It had relation to many metals.

Q. In any event, it had nothing to do with the business of running a mine in the West?

A. Oh, yes.

Q. In what respect?

A. Because this was the principles of metallurgy and its principles applied in every phase where metals are concerned.

Q. Well, does the process of refining steel, for instance, have anything to do with the running of a copper mill?

A. It has to do with the solution. Steel is a solution, so is every other mineral. Refined copper is the same thing.

Q. In any event, the courses which you took had nothing to do with the business of running a copper, gold, silver or tungsten mine?

A. No—what you say? I say it did have some.

Q. Then after you graduated, you worked for a firm known as the Babcocks & Willcox, is that right?

A. Yes. [86]

Q. And that was in the making of machinery?



(Testimony of John Phillip Zannaras.)

A. Yes; designing machinery.

Q. Designing machinery. Then you left then and engaged for a period of approximately ten years in transporting sulphur from the Gulf of Mexico to the Eastern Seaboard? A. Correct.

Q. That involved the manner of loading sulphur at the dock? A. Yes.

Q. The navigation of the boat to the proper seaboard and unloading it?

A. And other questions, and other questions.

Q. What other questions?

A. Well, we have to try to save labor by devising methods of handling that sulphur with the least expense. For example, I had a device, what is known as self-trimming bulkhead, by which we eliminated about 40 men.

Q. What was your relationship to this company?

A. Well, they called me a part of their organization.

Q. A part of their organization. Then in '37, that operation was terminated, is that right?

A. Correct.

Q. It was not successful? [87]

A. Well, not quite so. I think there were different interests that came in.

Q. For a period of several years you were engaged in litigation over the matter, is that right?

A. No; I did not. I had litigation for one year.

Q. And then you came to the West to look for a mining property, is that right? A. Correct.

Q. You went first to Yuma, did you?

(Testimony of John Phillip Zannaras.)

A. No; I went first to Las Vegas, Nevada.

Q. And prospected?

A. Looking—examination of properties, not prospecting.

Q. Examination of properties for yourself or others? A. For myself.

Q. Then where did you go to from Nevada?

A. I went to California.

Q. And how long did you stay there?

A. Well, I made a trip back to the East again and came back to California again. That took me up to some time in '49.

Q. And then you came to Arizona, is that right?

A. Yes; we came to Arizona with Mr. Robinson.

Q. First to Yuma? [88]

A. No; we went out to California first, the northern part of California, and then we came to Yuma and then we came up to Burro Creek.

Q. The location that you made or the mine that you located in Yuma County, did you do anything with that?

A. Yuma County, we have a mining claim; it is a copper claim, and I think probably Mr. Robinson was confused. That was located after we came in this locality.

Q. Well, you still have it, I presume?

A. We still have it; yes.

Q. Then you located on Burro Creek, is that right? A. That is right.

Q. How did you come to locate there?

A. Well, as I told you, we were looking for

(Testimony of John Phillip Zannaras.)

property which brought us from Nevada to the border of Oregon, down to Yuma, and we were examining properties. When I went to Burro Creek, I think I found the elements for which I was looking. Then I found water and I found plenty of ore and mines in that locality.

Q. How do you know you had plenty of ore?

A. I could see the Mystery Mines in the locality up there, rich bars of gold ore. [89]

Q. At the Mystery Mine?

A. Not only at the Mystery, in all that vicinity.

Q. Anybody working on those gold bars now?

A. Yes; they are held up, though. No gold mine is prosperous now, no gold mine all over the United States. Gold mining is rather slow, but I believe they are going to pick up now.

Q. What is the price of gold today?

A. \$45 an ounce.

Q. And what is that price with respect to what it was three years ago?

A. It is the same price.

Q. Same price?

A. Yes, and for a gold license from the United States Gold Treasury.

Q. In any event, you found these rich gold properties, is that right?      A. Yes.

Q. Were they being worked at that time?

A. No.

Q. So you took a bonded lease on it, did you?

A. Yes.

Q. Then what did you do?

(Testimony of John Phillip Zannaras.)

A. I went down to Burro Creek and started looking for a millsite and mill, and took a water right.

Q. Did you do any development or [90] exploration work on the Mystery Mines before you put up this mill?

A. We had a lot of samples. The openings was there and the ore is blocked out, and we saw assayed stuff.

Q. Where did you have it assayed?

A. We did our own assaying.

Q. Where did you do that; where did you have the equipment? A. Down in Yuma.

Q. You had a laboratory in Yuma there?

A. I had assay—I had a fire assay in Yuma.

Q. You what?

A. I had fire assay in Yuma.

Q. You satisfied yourself it was a good property, is that right? A. Yes; they were.

Q. How much ore did you have blocked out there, do you know?

A. No; I don't recollect exactly, but I know around many thousands of tons.

Q. What was the percentage of gold in the ore?

A. It ran about \$27 a ton.

Q. That is pretty good gold ore? A. It is.

Q. Do you still have that bonded lease? [91]

A. No; I don't.

Q. You gave that up? A. Yes.

Q. Now, Mr. Zannaras, the first thing you did was to build the road, I believe, and lay your foundations and put up your walls?



(Testimony of John Phillip Zannaras.)

A. That is right.

Q. You had the mill constructed and ready for operation in, I believe you said, May of '42?

A. Yes.

Q. Was that, when it was ready for operation, as a tungsten milling operation or for gold milling operation?

A. No; it was for tungsten milling operation.

Q. Well, I believe then, as I recall, you said you previously had it set up or originally had it set up as a gold milling operation?

A. Well, gold milling operation is nothing else but a ball mill and an amalgamator and tank or cyanidation.

Q. Did I understand you to say that you had it completed for gold milling operations before you discovered the tungsten?

A. I should say it was practically completed for gold purposes.

Q. Then you discovered this tungsten [92] deposit? A. Correct.

Q. What did you do immediately when you discovered it?

A. What did I do when I discovered it?

Q. Yes.

A. Well, I will tell you, at that time we were at war, which was very important—tungsten was very important at that time, so I started to change the plans and make gravity concentration at the mill.

Q. That was the first thing you did?



(Testimony of John Phillip Zannaras.)

A. Yes.

Q. Then what did you do?

A. Of course, I located the ground and proceeded to develop it.

Q. Did you proceed to develop it or did you proceed to fix your mill up first?

A. Fix my mill first. My mill practically—was practically finished. It was done at the same time. The mill was developed with roads and other works.

Q. Was that the open cut work shaft that you speak of?

A. I mean about the entire mining claims in general.

Q. Didn't I understand you to say you first [93] made an open cut on No. 19?

A. Well, we made a lot of diggings in other places, but that was the major operation as we saw.

Q. Was the open cut first?

A. With respect to what?

Q. With respect to your development? I believe you said a moment ago you made the open cut on 19 first?

A. When we started developing the mine—

Q. Now, I want to ask you this question: Did you make the cut on 19 first, or did you make the cut at the same time?

A. I made the cut first.

Q. How did you make that?

A. We had a compressor and jackhammers—jackhammers and a compressor.

Q. A bulldozer?

(Testimony of John Phillip Zannaras.)

A. Not a bulldozer. The bulldozer was to fix the road.

Q. Then you abandoned that and moved onto No. 28?      A. We did not abandon it.

Q. You quit working it?

A. Well, we run it twice to work on No.—a higher claim, on No. 28.

Q. About that time, I believe, Mr. Zannaras, [94] you made an application to the Reconstruction Finance Corporation for a loan, did you not?

A. I did.

Q. And they sent Bill Gohring out to examine the property and Mr. Maitland?      A. Yes.

Q. Did they make a loan?

A. They offered me a loan.

Q. What did they offer you?

A. They offered me first \$5,000.

Q. Did you accept it?      A. No.

Q. Why didn't you?

A. Because I thought it was too small.

Q. Too small?      A. Certainly.

Q. How many years' experience has Mr. Gohring had in mining, do you know?

A. No; I do not know.

Q. Isn't it a fact, Mr. Zannaras, that you wrote them a letter and said you would not accept any loan unless they would let you spend \$8,000 more on your mill, and they told you you had to do development work there to see if you had any ore there?

A. No; that is not correct. [95]

Q. Did you write a letter in which you stated

(Testimony of John Phillip Zannaras.)

that your application for the loan was conditioned on being allowed to spend \$8,000 on your mill?

A. I don't recollect of such a letter.

Q. Did you make any such condition orally?

A. No. The only condition I made was, they ought to give me more money. I spent lots more money myself. I mean \$5,000 out there is a very small amount.

Q. How much money did you think they should give you?

A. I told them what the next loan was. It was not my opinion. The Government has different types of loans. The first type, it started with \$5,000 and the next is \$20,000, and they offered to give me Five and another Five, and I refused to go into business with 5,000.

Q. In any event, you went ahead with your construction of the mill; you had that completed in May, 1932?

A. '42.

Q. Pardon?

A. '42. You said '32.

Q. I meant '42. I am sorry. It was all ready to go?

A. Yes; I should say. [96]

Q. With respect to the ore that is too big that comes through your mill, how do you get it back up to the head of the mill there?

A. There is a screen that—there is a classifying screen up on the exit of the mill, and the ball mill is so regulated so that only ore that passes that screen goes through.

Q. How do you get what is left—

A. That doesn't come out.

(Testimony of John Phillip Zannaras.)

Q. Where does it go?

A. It stays in the ball mill.

Q. Well, in any event, Mr. Zannaras, did you start doing any milling at that time?

A. We did mill.

Q. How much did you run through the mill?

A. Well, besides tungsten ore, we made some milling of the gold, and I do not remember the exact tonnage.

Q. I thought you told me just a little bit ago you never did——

A. We tried some ore for both.

Q. I am speaking now of your tungsten operation; how much tungsten did you put through your mill in '42; how much tungsten ore?

A. Well, it wasn't very much. I don't remember exactly. [97]

Q. Now, did I understand you to say that this vein of ore that you sent to Tucson, or rather, the ore which you sent to Tucson was not hand picked?

A. No; it was the run of the mine.

Q. Run of the mine? A. Yes.

Q. You have lots of it there? A. Yes, sir.

Q. Now, during '42, what prevented you from selling more ore, Mr. Zannaras?

A. I told you we developed the mine.

Q. What do you mean by "development"; what did you do?

A. We make new road and go up in the other place. We were done, you see, we have to go other places. I had to make, maybe a mile and a half of road.

(Testimony of John Phillip Zannaras.)

Q. How did you make that, with a County bulldozer? A. Yes.

Q. How long did that take you?

A. Oh, it took quite some time, because a fellow who used to come and work at Bagdad, and come after 5:00 o'clock, and go to our place after 5:00 o'clock, and work for one hour and quit.

Q. What were you doing in the meantime? [98]

A. Back in mill trying to improve our place. We built some houses and done some grading, and so on.

Q. Why didn't you go ahead and pull ore from the open cut?

A. We already decided to go from the other place.

Q. My goodness, gracious, do you mean at the time the war was going on that you were just stubborn——

A. Let me tell you something, you sit back here, but you come back in the mountains, I will show you how things are going.

Q. I'd like to know why you didn't go ahead and mine from the open cut? A. I had test——

Q. Why didn't you go ahead and mine from the open cut?

A. I have the mill and we found it best for us to move to other place.

Q. I know, but this time when this fellow came in and worked for an hour, why didn't you—during that time you didn't mill from the open cut.

A. Because at that time we thought that was the best thing to do.



(Testimony of John Phillip Zannaras.)

Q. You mean fool around?

A. No; we weren't fooling around, nobody [99] fool around back there, I can tell you that. You come up back in the mountains, you can't fool there. You probably fool in town.

Q. Well, now, Mr. Zannaras, I'd like to find out why it is you had your mill all set and ready to run, you had this open cut there which you say you could mine very cheaply?

A. That is right.

Q. And profitably. Why did you then go ahead and build houses and things of that kind?

A. I will give you an answer for that. Bagdad is responsible for us—Bagdad is the one that stopped us, from pollution; Bagdad is trying to grab and Bagdad is trying to drive us out there, that is the reason we can't work.

Q. Let's get back to the question, Mr. Zannaras. In 1942, and the middle of the summer, you had your mill ready to go?

A. Yes.

Q. You had an open cut exposure of ore that you say there was 100,000 tons?

A. That is right.

Q. You say it is a profitable operation to mill it?

A. It is.

Q. You were all set to go, and yet you did [100] no mining. I want to know why you didn't go ahead and mine there until you could get ready.

A. All right, I will answer it. At that time I had a visit from the United States Geological Survey, Dr. Krenkoff visited my place and spent all night going over the claims, and after we finished he rec-

(Testimony of John Phillip Zannaras.)

ommended to me better to start mining at the high grade place on Claim No. 28, and that he was going to recommend a big loan from the Government.

Q. For the purpose of what?

A. Developing up there, the No. 28. That is the reason I moved up to 28, and that is the reason we were in a hurry to get up there.

Q. In any event, Mr. Zannaras, you did not turn out any tungsten in '42?

A. No; I wasn't ready, quite ready.

Q. Then in '43, did you turn out any tungsten; did you operate the mill then?

A. That is the time we start working at the shaft. We have to develop the shaft.

Q. How long does it take to put down a shaft 8 by 10 by 30 feet?

A. You do not go on down that way. You have to move compressor in there, you have to make preparations for compressor and foundation for hoist. [101] I do a good job, not a kind of incomplete jobs.

Q. In any event, you didn't produce any ore or any tungsten in '43?

A. Except the one that was shipped to the stockpile.

Q. That was 10 tons?

A. Yes.

Q. I am a little curious about that, Mr. Zannaras. That was a pretty profitable operation, wasn't it?

A. Which one?

Q. The 10 tons that you shipped to the stockpile.

(Testimony of John Phillip Zannaras.)

A. With \$25 taken out of it? I didn't think it is very profitable.

Q. Well, Mr. Robinson said you got that 10 tons out in a day and a half himself and you received \$358.34 for the 10 tons, did you not? A. Yes.

Q. Which meant you received \$358.34, out of which there had already been deducted the treatment, had there not? A. Yes.

Q. So that——

A. And also transportation.

Q. And also transportation? [102]

A. Was paid.

Q. This settlement sheet shows the net received from those 10 tons, after deducting chemical treatment and freight and handling, to be a net of \$358.34. Now, do I understand you had to pay additional transportation? A. Stock piling.

Q. Eight dollars a ton?

A. Something like that.

Q. So we deduct \$80 from the \$358 and we get \$278? A. Yes.

Q. For a day and a half work?

A. No; you shouldn't look at it that way. For a value of \$700 we get \$270. Now, that is not good business.

Q. Pardon me, I don't follow you.

A. We mine the material which values \$700. That material at the mine values about \$700, and we receive \$270 for it. That is poor business, I should say.

(Testimony of John Phillip Zannaras.)

Q. That is an average profit per ton of \$27, isn't it?

A. I tell you, it all depends on what you mine. A straight car of ore, you just throw two-thirds of it away. [103]

Q. I thought you said this was mine run ore just a moment ago?

A. Then I told you what come from the vein about three feet wide on the side, big vein. That is what I say.

Q. Anyway, you had a lot more of it?

A. Yes, and we had.

Q. As a matter of fact, the average small mine is considered very profitable if it makes a dollar a ton?

A. A dollar a ton, small mine?

Q. Yes. A. I think you are mistaken.

Q. In any event, for some reason or other, Mr. Zannaras, you elected not to proceed with further mining of this material and sending it to the stock pile?

A. My method was an economic solution of the problem.

Q. In other words, you wanted to make more money out of the material, is that it?

A. I would be foolish to pay so much money at the time I got all the facilities for milling and exploring stuff.

Q. Would it be foolish on the basis of the fact that you saying you were changing over to [104] strategic material in the period of war, wouldn't

(Testimony of John Phillip Zannaras.)

that be a consideration to you that the Government needed that?

A. The Government did not need tungsten so much. You probably don't know much about it.

Q. Why didn't you stock pile it; why would they be willing to come out and make a loan?

A. Yes, but it was for copper and everything.

Q. Which was for the purpose of developing strategic materials?

A. I am not competent in expressing the Government's policy.

Q. In any event, Mr. Zannaras, you stopped operations. But you say it produced you \$27 a ton net?

A. Net? 27? Let me see. I will have to check it up.

Q. I think you agreed at eight dollars a ton, which would be \$80 from 358, which would be \$278.

A. All mining expenses are not included in there.

Q. A day and a half work for Mr. Robinson.

A. Well, a day and a half work, but that rate of a day and a half wasn't alone. He worked a day and a half, but you got to figure out how much time it took him to put the hoist there, compressor [105] there.

Q. It was all ready then, you had all of that work done; you were ready for mining at \$27 a ton and you didn't do it?

A. No; we didn't do it because it wasn't ready to do it.



(Testimony of John Phillip Zannaras.)

Q. In '44, you say the pollution of the water made it impossible for you to mine, is that right?

A. Correct.

Q. Mr. Zannaras, below your place, or, rather, below the Kingman Crossing and between the Kingman Crossing and your place, there are a number of deep holes, are there not, 20 and 30 feet deep which are generally filled with water?

A. 20 and 30 feet long?

Q. Yes. A. 30 feet long is probably one.

Q. There are places down there where people from Bagdad come down and swim below Kingman Crossing and your property? A. Yes.

Q. And they go fishing there?

A. Some, yes. They used to go until Bagdad killed the fish.

Q. You mean to say there is no fishing there now? [106] A. Very little.

Q. You know, as a matter of fact, they were fishing there in the summer of 1944 and the summer of 1945? A. A good fish story.

Q. I am asking you a question: Isn't it a fact that the water didn't even kill the fishing there?

A. Don't tell me, I live there. People don't come but once a year. I live on Burro Creek. I saw fish dead on the bank, and by the thousands.

Q. By the thousands?

A. Yes, and even now the water is poisoned.

Q. In any event, Mr. Zannaras, you were unable to do any milling in '45 because these tailings escaped eight miles upstream and still came down

(Testimony of John Phillip Zannaras.)

and polluted your water? A. They did.

Q. And the bedstream in between Bagdad and your property is principally of a sandy nature, is it not? A. No, sir.

Q. As a matter of fact, Mr. Zannaras, approximately a half mile below Bagdad? A. Yes.

Q. The water in normally low seasons disappears, doesn't it? [107]

A. Not in normal seasons.

Q. In the ordinary summer the water will go under, disappear below Bagdad and reappear below Kingman Crossing? A. Never.

Q. Never?

A. Extraordinary, maybe, but not ordinary conditions. There is always sufficient water in Burro Creek, there used to be.

Q. For it to disappear it has to be of a sandy formation, gravelly formation? A. It must be.

Q. Did I understand you to say that between Bagdad and your place it is a rock bed?

A. Well, it is most part rock. It is about seven miles, with sand on top of it. The bed is rock.

Q. The water flows through the sand, doesn't it?

A. No; not necessarily. It is rock, rock, the bed of the creek is rock and on top of it there are batches, layers where there is gravel and sand accumulated, and they are shifting all the time.

Q. All right. In any event, in May, '45, the water became clear, did it not?

A. May? No; that was probably in the summer of '45. [108]

(Testimony of John Phillip Zannaras.)

Q. Do you remember testifying, Mr. Zannaras, in this case up in Prescott in respect to this matter?

A. Some; was many years ago.

Q. You remember that your deposition was taken which is in the file here? A. Yes.

Q. At that time you were asked questions under this deposition taken July 2nd, 1945? A. Yes.

Q. "Question: Has the water cleared up again? Answer: Yes. Question. Is it clear now? Answer: Yes. Question: On July 2. How long has it been clear? Answer: I would say from about May 15th. Question: May 15, 1945? Answer: That is right."

The Witness: I may be mistaken. Instead of May it is June. One month.

Q. You testified at that time it was on May 15th, 1945? A. I presume that is correct.

Q. The water cleared up. Now, have you operated the mill any since that time, Mr. Zannaras?

A. Since '45?

Q. Yes. A. Well, yes; we did a little bit.

Q. When? [109]

A. We run it for some trial tests in '46 and also we run the mill for trial tests.

Q. When? A. In '46.

Q. At what time?

A. I don't remember the exact time.

Q. How much ore did you put through it?

A. Very little. It was just checking it, checking the condition in the mill.

Q. Why didn't you, when the water cleared up

(Testimony of John Phillip Zannaras.)

on May 15th, 1945, begin mining your ore and milling it?

A. Because Mr. Robinson went to the Army.

Q. Well, now, what particular peculiar qualifications does Mr. Robinson have as a miner that can't be replaced by anyone else?

A. If you will look at your papers you will find out in that period there was a very acute shortage of labor, very acute.

Q. You mean you were unable to hire ordinary men?

A. Yes, without qualifications, and Mr. Robinson, I wasn't—I was unable to hire. I couldn't find him.

Q. You made considerable search, did you?

A. I did; in fact, we passed a resolution in Prescott asking the Government to defer miners, [110] all miners deferred from the Service, but they didn't do it, but at the war they picked up every miner and inducted them in the Army.

Q. And the reason you made no attempt to operate in '45 was because Mr. Robinson had gone into the Army?      A. Correct.

Q. Why didn't you operate in '46?

A. The same condition; we had the same condition in '46.

Q. Mr. Zannaras, you are an expert, are you not, you are the engineer?      A. That is right.

Q. You are the one who has had metallurgy?

A. Yes.

Q. Mr. Robinson's experience was as an operator

(Testimony of John Phillip Zannaras.)

of a small coal mine in the East. Now, other than for the fact that he had had that experience, did he have any other qualifications that you could not replace?

A. Mr. Robinson stayed with me for several years, he learned lots of things. He is very capable in milling.

Q. Very capable in milling. What experience has he had in operating a mill such as you have?

A. He done it in my place. He helped put [111] up the mill and he learned everything.

Q. Does that qualify a man to be an expert in operating a tungsten mill?

A. He is not an expert, but he is capable. He does not qualify as an expert.

Q. What experience has he had other than he had in putting the mill there; he learned that from you; what experience did he have?

A. Well, he was a miner first of all.

Q. A coal miner?

A. Yes; a miner; coal miner.

Q. Is there considerable similarity between the work of digging coal out of the ground and a rock miner?

A. I don't think there is a difference between the two.

Q. You say the reason you didn't make any attempt to operate that in '46 was because you could not find anyone to take Mr. Robinson's place?

A. That is right. I had letters from Mr. Robin-



(Testimony of John Phillip Zannaras.)

son that he was coming out of the Army and I thought I'd wait there.

Q. He got there in the middle of '47?

A. Correct.

Q. Now, in '47, in the spring, you didn't hire anyone because you were waiting for Mr. [112] Robinson?

A. Yes, sir.

Q. You do admit you could have hired someone in the pring of '47?

A. Probably, yes.

Q. Now, did you have a man working for you?

A. When?

Q. Up to the time Mr. Robinson left and at the time the deposition was taken?

A. Yes; I had him working for me.

Q. He was working for you all through '45?

A. Yes—oh, not all through '45.

Q. Why did you let him go?

A. He left.

Q. Why did he leave?

A. I don't know. Mr. Dickey took him.

Q. Did you pay him any salary?

A. I did.

Q. In any event, you had a man through the spring of '45 and at the time your deposition was taken in July, '45?

A. Yes; I had a man.

Q. Well, from May 15th, '45, until July, when this deposition was taken, what had you done toward putting the mill in operation?

A. Let's get straight on the dates. From what date? [113]

Q. From the time the water cleared up, as you say, in May, '45?

A. Yes.

(Testimony of John Phillip Zannaras.)

Q. Until July, 1945, what did you do to put your mill in operation?

A. We probably installed a new engine or something. I don't remember exactly.

Q. You mean the engine you had on your mill was not a good engine?

A. No, we put an auxiliary engine.

Q. What did you need an auxiliary engine for?

A. Because you got auxiliary engines in every mill. If one goes wrong you go to the other. At the time you overhaul one, you have the other.

Q. Mr. Robinson had already gone in the Army?

Mr. Cox: The time and place?

Mr. Wilmer: At the time we are talking about.

Mr. Cox: May 15th?

Mr. Wilmer: The time we are talking about.

Mr. Cox: I am just asking what time counsel is speaking of, May 15th.

Mr. Wilmer: It is very clear as to what we are talking about. For your information, we are talking about from May 15th to July. Mr. Robinson had already gone to the Army?

A. Yes, on May 20th, and left the place. [114]

Q. You then planned to go on without him?

A. Without replacing him?

Q. Yes.

A. If I could find a man to replace him.

Q. You had one.

A. That man was not Mr. Robinson's quality.

Q. All right. In any event, Mr. Robinson got there in the middle of the Summer of '47?

(Testimony of John Phillip Zannaras.)

A. That is right.

Q. And what did you say the first thing was you did then?

A. We built a laboratory.

Q. That was to test ores?

A. Yes.

Q. You were well satisfied you had a rich deposit of ore there, were you not?

A. Yes.

Q. Ample ore to go ahead and operate your mill?

A. Yes.

Q. Why didn't you go ahead and put your mill back in operation then?

A. Because Mr. Robinson wanted to be near his wife. He brought his wife from the other side and he wrote me a letter he wants to stay near his wife for a few months until she got used to the desert, so we decided to build a laboratory. [115]

Q. Was there anything to keep Mr. Robinson from staying at the mill and being near his wife, and you directing the operations at the mine? I mean there wasn't any need for Mr. Robinson, you could hire plenty of men?

A. I will tell you, a man and a wife and a girl coming from the other side and they are on the desert in Arizona is something different. I don't know whether you realize it or not. Mr. Robinson wanted to be near his wife and I justified him 100 per cent, I—remember, I make sacrifice to him to go ahead and build the laboratory, something we needed there.

Q. Your mine was about, say, eight miles away from your mill?

A. About ten miles.

Q. Was there any reason why you were afraid to go to the mine without Mr. Robinson being with

(Testimony of John Phillip Zannaras.)

you?           A. Went to the mine?

Q. Why couldn't he go to the mine?

A. He was at the mine.

Q. Why couldn't you run the mill?

A. Run the mill?

Q. Yes, why had the two of you to be together?

A. I couldn't run it myself alone.

Q. Why? [116]

A. Because it takes two men to run the mill.

Q. My goodness, gracious, you mean to say you couldn't hire anybody in '47 and '48?

A. Mr. Robinson had to stay with his wife and wouldn't mine, he wanted to stay with his wife, he didn't want to leave his wife.

Q. He lived in a house trailer?

A. No, they lived in a house.

Q. That was located where?

A. At the mine.

Q. Well, now, the thing I can't understand is why Mr. Robinson couldn't stay at the mine and direct operations there and you go to the mill and direct operations there.

A. Mr. Robinson had to stay at mine and he didn't like to get away from near the house. He got a wife and a boy.

Q. Well, the house isn't over 150 or 200 feet from the mine, is it?           A. It can't be helped.

Q. How far is it?           A. I'd say 600 feet.

Q. 600 feet of plain open country?

A. No, it isn't plain open country. You can't see eight yards by the mine. They got cedar trees.

(Testimony of John Phillip Zannaras.)

Q. Where did you build this laboratory? [117]

A. Right across from the house.

Q. At the mine? A. At the mine.

Q. So your reason for not doing anything, then, was because Mr. Robinson wanted to stay with his wife? A. Exactly.

Q. Then when did you get the mill back in shape for operation again? A. June 28th.

Q. When did you start putting it in shape?

A. Well, we started, I should say, well, during that time we were both working at the mine and at the mill, so from the time Mr. Robinson came, our work was divided at the mill or at the mine, I can't tell you exactly the dates at the mine, time at the mine.

Q. There came a time when you did go to the mill, is that right?

A. Yes, came a time after two months that Mrs Robinson got used to the place.

Q. Got used to the place?

A. That is right.

Q. And then you went and put the mill back in shape? A. Yes. [118]

Q. What did you do to put it in shape?

A. We overhauled it, everything.

Q. As I understand you, Mr. Zannaras, you put approximately ten or fifteen tons of ore through that mill? A. Yes.

Q. What had worn out?

A. Any machinery that stays six months, it has to be overhauled.



(Testimony of John Phillip Zannaras.)

Q. Tell me what you did?

A. First of all, we have to overhaul the engine there, we have to overhaul the concentrating tables; the feeder; the ball mill, all of that machinery have to be overhauled, and have to make new pads, overhaul the pump, engine out there, the pipes and valves, all of that machinery have to be looked over.

Q. This thing has a roof over it?

A. It does, yes. ?

Q. And closed on two sides?

A. Yes, one side—one side is closed, roof on top, and one side is.

Q. Then you say you got this mill in shape by June 28th? A. That is right.

Q. It took you from the middle of '47 to June of [119] '48 to build this little laboratory and to put your mill in shape again? A. Yes.

Q. How big is that laboratory?

A. Oh, it's about 20 by 25 feet, something like that.

Q. 20 by 25 feet?

A. Yes, it has got machinery in there.

Q. All right. Then you started your mill?

A. Yes, we start it.

Q. You couldn't get enough water? A. No.

Q. Are you familiar with the Kingman Crossing in Burro Creek? A. Well, familiar, yes.

Q. How did you go up to Bagdad when you say you went up to take these pictures?

A. Oh, we went through Bagdad.

(Testimony of John Phillip Zannaras.)

Q. You didn't go up the bed of the creek?

A. Oh, no, but we have been up there. We have not been at the ranch. Where we take pictures we have to take and follow the road down to the pumping station.

Q. At the time you went up to take the pictures at Bagdad that you have brought here, was there any water flowing at the Kingman Crossing above [120] your place?

A. We didn't go across that place.

Q. I didn't ask you that. Was water flowing at the Kingman Crossing?

A. There may be just a little bit flowing.

Q. How did it get there if it was dry up above?

A. There are some parts when there are some pockets of gravel and sand.

Q. Can you tell me, Mr. Zannaras, if at any time in the Summer of '48 there was less than four to six feet wide, three inch deep stream flowing at the Kingman Crossing?

A. Let's see——

Q. Four to six feet wide, and approximately three inches deep.

A. Had nothing in.

Q. Pardon?

A. No, it wasn't.

Q. Was there any water flowing there?

A. A little bit.

Mr. Cox: Where?

Mr. Wilmer: Kingman Crossing.

A. It is about three miles above my place, three miles above my place.

Q. As a matter of fact, Mr. Zannaras, above the

(Testimony of John Phillip Zannaras.)

Kingman Crossing up to Bagdad is rather a [121] sandy stretch there?

A. There is, appears there—there are pockets of sand and gravel.

Q. What I want to know is, looking at it, you see nothing but sand, that is right, isn't it?

A. Yes.

Q. Below Kingman Crossing and down to your place it becomes bedrock? A. More rock.

Q. Box Canyon? A. Yes.

Q. Now, the water comes up? A. Yes.

Q. Do I understand you to say that in the month of July, 1948, there was no water flowing into Burro Creek down by—where your sump is?

A. Slowly dripping. There is a little drip coming down.

Q. Very little?

A. About how wide, probably wasn't four or five inches wide.

Q. How wide would you say the stream was at that place at its widest point?

A. The stream? You mean the flow in the stream?

Q. I mean the water. [122]

A. Water standing in there, it wasn't more than four inches, I should say.

Q. Were there any large pools of water there?

A. Well, there are some very depleted pools, wasn't large pools.

Q. Would you say there was any as long as 30 or 40 feet long and five or six feet wide?

A. At that time there was at the back of those

(Testimony of John Phillip Zannaras.)

pools, there was a little bit of water but not very much.

Q. That was true through August, was it?

A. Correct.

Q. And September? A. And September.

Q. And October? A. Yes.

Q. And November? A. Yes.

Q. And December?

A. December 2nd is the time I noticed more water in Burro Creek.

Q. Up until December, the water——

A. Second.

Q. ——Second, the amount you say was four feet? A. It was varying.

Q. Varying. What do you mean by “varying,” how [123] much water there was?

A. Yes, sometimes come a little more water down and then stop again.

Q. Have any floods?

A. No floods, just very little water.

Q. Well, at any time between July, or the first of July, and the 2nd of December, was there more than a very slight trickle of water into Burro Creek down at your place?

A. Maybe sometimes, a little different.

Q. What do you mean by “a little different”?

A. What I am trying—you tried to be too technical. That water there, sometimes probably 4 inches, sometimes maybe 6 inches, sometimes 2 inches. It varies through the day.

Q. Two to six inches? A. That is right.

(Testimony of John Phillip Zannaras.)

Q. How deep?

A. Oh, it wasn't more than an eighth of an inch.

Q. Now, Mr. Zannaras, in your certificate which you received for the appropriation of three million gallons of water, prior to receiving that you filed certain sworn proof of appropriation with the State Water Commission, did you not?      A. Yes, sir.

Q. In which you said that you had at that [124] time put into beneficial use three million gallons of water per year?      A. That is right.

Q. Had you in the year preceding that, put into beneficial use three million gallons of water?

Mr. Cox: Just a moment. If this question is merely for general impeachment purposes of this witness there would be no objection, but if it is for the purpose of impeaching the findings of the State Water Department on the certificate of water right, we object. There is a method set up of attacking it after the certificate has been issued.

Mr. Wilmer: May it please the Court, we were not present at the time the certificate was granted and had no notice of what this man told the Commissioner and what the facts were which the Commissioner got.

The Court: All right, go ahead. We will have our afternoon recess.

(Thereupon a short recess was taken.)

(All parties as noted by the Clerk's record being present, the trial resumed as follows.)

Mr. Wilmer: What was the last question?



(Testimony of John Phillip Zannaras.)

(The last question was read by the reporter.)

The Witness: Preceding which year? [125]

Mr. Wilmer: At the time you filed your proof of appropriation.

The Witness: Yes, sir; I did.

Q. What did you use it for?

A. For mining purposes and domestic purposes.

Q. Well, that is about equivalent to 15 gallons a minute, isn't it? A. 15 gallons a minute?

Q. Yes. A. 8,000 gallons a day.

Q. Pardon? A. 8,000 gallons a day.

Q. 8,000 gallons a day. A. That is right.

Q. Now, what did you use 8,000 gallons of water for? A. We used it for the mine.

Q. Just tell me specifically what you used it for.

A. We have to wet the ore, we have to drink, we have to use it for machinery, hoist take that water.

Q. You mean the engine on the hoist?

A. Engine on the hoist and wetting ore and compressor and jackhammers and also for the mill and also for the house, otherwise you go—you [126] need water all the time.

Q. Well, the use of water in the house would be for drinking? A. Washing.

Q. Washing.

A. Washing the place, washing the house, cleaning the mill and all of that stuff, thousands of gallons.

Q. Thousands of gallons for cooking—

A. For mill and machinery.

Q. Let's take it one at a time. Now, the house.

(Testimony of John Phillip Zannaras.)

You had most of the time yourself and Mr. Robinson and several men?

A. I had five men once in there.

Q. How long did you have five men?

A. Well, I don't remember exactly, but I had four men and I had five men, and then I had most of the time myself, Robinson, and another customer on occasions, and my brother and other people come in there, sometimes four and five people.

Q. Well, that wouldn't make much of a dent in 8,000 gallons, would it?

A. That is not so, takes lots of water for that domestic purposes.

Q. Give me an estimate of how much you use for domestic purposes, would you? [127]

A. A day, you mean?

Q. Yes.

A. I should say probably 3,000 gallons.

Q. For drinking, washing the house, cooking?

A. Yes, and the mill and the houses——

Q. No, just stay with the house, I want to know your domestic—— A. Yes.

Q. How much would you say you use per day for domestic use? A. About 3,000 gallons.

Q. About 3,000 gallons, and so we understand what it is for, that is for drinking, for house purposes, such as cooking, taking a bath and washing your hands and face, cleaning up the house and what else? A. Cleaning the machinery.

Q. What machinery?

A. Washing machinery, washing trucks——

(Testimony of John Phillip Zannaras.)

Q. Just a minute.

Mr. Cox: Mr. Wilmer, may I ask are you directing his attention to the time before or after the certificate?

Mr. Wilmer: Before.

Mr. Cox: If it please the Court, we think this is immaterial. That certificate is conclusive [128] evidence unless it is attacked directly. The water code sets out——

The Court: I thought you had that in mind. I don't know whether that could be attacked collaterally or not, that question there. If he has made a previous inconsistent statement, it might go to his credibility in this case.

Mr. Wilmer: There was a recent, fairly recent case, your Honor——

The Court: I am going to admit it for this purpose. It may be admissible for the other, I don't know.

Q. (By Mr. Wilmer): I am referring now not to the machinery, not to your mill, Mr. Zannaras; I am referring only to your domestic use, household.

A. You wash houses and you wash machinery, too, sometimes clean up, that is what I had in mind.

Q. What machinery do you mean?

A. I have to wash floor of mill.

Q. No, now wait a minute. What I want to know is this——

A. Yes.

Q. For the purpose, the purpose of drinking, personal hygiene, washing yourself or taking a bath, and so on, cooking, washing the floor of the house, if you need to, washing dishes. [129]

(Testimony of John Phillip Zannaras.)

A. What about washing the mill?

Q. No, I am not interested in that.

A. All right.

Q. What I want to know is how much you used for the house, for the purposes I have stated.

A. Well, probably 2,000 gallons a day.

Q. For the purposes I stated?

A. That is right.

Q. All right. Now, you have some reference to washing the mill?      A. Yes.

Q. Just what do you mean by "washing the mill"?

A. Have to wash the floor.

Q. Every day?      A. Regularly.

Q. Even when you are not operating it?

A. We operate, but we are working that mill, we continuously work at the mill. Any time we are there we work at the mill.

Q. What do you do?

A. We install engines, we overhaul engines.

Q. I though you said that in 1942, the middle of the year, it was all ready to go, it was fixed up ready to go. Now, what do you have to wash out after that time at the mill?

A. Any time you work at the mill you have [130] to wash the floor of the mill.

Q. What do you have to do at the mill when you aren't running it and have it ready to go?

A. We work at the mill.

Q. What did you have to do?

A. We install some machinery.

(Testimony of John Phillip Zannaras.)

Q. Why did you install some machinery when your mill is ready to operate?

A. We are doing something all the time. We are checking on the pump when you are at the mill and you work, you put a hose on there and start washing all that stuff around, and you do it again the next day.

Q. Then, as I understand, Mr. Zannaras, every day you wash the floor of the mill out, every day with the hose?

A. It wasn't every day, but very regularly.

Q. How much water would it take to wash out the floor of the mill?

A. About a thousand gallons.

Q. About a thousand gallons?

A. About a thousand gallons.

Q. And how often would you say you washed it; every other day?

A. Well, sometimes maybe every day.

Q. 365 days a year? [131]

A. Well, not quite 365 days, we don't work Sundays.

Q. Other than that?

A. Yes, and sometimes maybe in town or something, but it is a part of—you are asking me a difficult question.

Q. Why do you have to keep the floor of the mill so clean? Is there anything about it that is going to germinate?

A. It needs washing.

Q. What I want to know is why you have to wash the floor every day. Do you eat off of it?



(Testimony of John Phillip Zannaras.)

A. You eat at your office, they wash your office, don't they?

Q. I don't wash my office every day or once a week or once a month either. Why do you have to have the floor of the mill washed every day or every other day, and why does it take a thousand gallons?

A. Because we have to clean the place, we work in there. There is oil and sometimes ore or other stuff accumulating that has to be removed by water.

Q. All right. In addition to that, you ran the mill, I believe you said, three or four test trials?

A. We run it more regularly. [132]

Q. Wait a minute. When did you say you ran the mill the first time?

A. The first time? Now, you see, when you run a mill you don't only run that ore. The first thing I did, I put the engine up and I started working the engine and to check the engine out, that takes water.

Q. What do you need water for that engine for?

A. To cool it down.

Q. That is the water you pour on the top which stays in there?

A. No, it doesn't, that is circulating water. It is continuous circulation of water going into the engine.

Q. Do I understand you, Mr. Zannaras, that this water which is run through the engine once and goes out in the ground.

A. Yes, it goes out in the ground.

Q. Pardon? A. It goes out in the ground.

Q. Why doesn't it circulate?

A. Because it is designed——

(Testimony of John Phillip Zannaras.)

Q. What kind of an engine is that?

A. It is a Western Engine.

Q. Western Engine? A. Yes. [133]

Q. It is designed so that you have a hose at the top and it runs out at the bottom? A. Yes.

Q. Is that the way it is designed to run?

A. You can make any design you want. That is the cooling system we have adopted there.

Q. What I want to know is this: This engine that is out there has a pulley that runs to your ball mill, is that right? A. There are two engines.

Q. The big one? A. A big and small one.

Q. The big one is installed so you have to run water through, so you can't circulate it?

A. The big one?

Q. Yes.

A. You can circulate it if you have constructions, but we don't need it. You can circulate the water or you can run the water through it, you have a choice.

Q. If you want to open a petcock at the bottom you can do it?

A. No; not a thing like that; that would have a spout. The question is you can circulate water by two ways; one, you can put the water to go through the engine and go out, the other one is, [134] you can have a tank to circulate the water, a cooling system to cool the water, and we have adopted the two systems whereby the water comes out in the ground.

Q. That is the economical way to use it?

(Testimony of John Phillip Zannaras.)

A. I don't say it is, but that is the best way we find.

Q. How much water would you run through an engine in 24 hours if you ran it 24 hours?

A. Oh, if you run water for 24 hours you run lots of water, sure. I can't tell you exactly.

Q. How many times in 1942 did you run that engine?      A. How many times?

Q. How many times?

A. It is difficult for me to remember; it is impossible.

Q. Once a week?      A. More.

Q. Twice a week?

A. I don't know by that.

Q. Mr. Zannaras, what I am trying to do is to try to find out how much you did run the engine.

A. Yes.

Q. You testified you used this water. I want to know what you used it for? [135]

A. You asked me a question impossible for me to remember. How can I remember ten years back if I run it four times, five or six times. I know we ran the engine and it took lots of water to go through the engine.

Q. How many thousand gallons a day would you run through the engine?

A. It is difficult for me to answer, but it is plenty water go through the engine.

Q. All right, what other uses do you make for water, Mr. Zannaras?

(Testimony of John Phillip Zannaras.)

A. We use water for the mine, for jackhammers and for the hoist, and for wetting ore.

Q. I mean, I am not familiar with it. Why do you use it in connection with the jackhammer?

A. You have to have water go through the jackhammer.

Q. To cool it?

A. In cooling it, and keeps the dust down.

Q. That is included in wetting the ore?

A. No; it does not wet the ore, wetting of ore is after it——

Q. How much water does it take a day to wet the ore in an operation like you have there?

A. Wet the ore? You take as much as—sometimes as much as a thousand gallons. [136]

Q. That is in the open shaft?

A. Yes; in the shaft.

Q. Now, that shaft is not a horizontal or a vertical shaft? A. No; it is incline.

Q. Incline shaft? A. Incline shaft.

Q. About what degrees?

A. About 70 degrees.

Q. It is sunk in solid rock?

A. No; it is not solid rock; it is fractured rock.

Q. Is it tight rock?

A. No; it is fractured; it does not hold water.

Q. Now, would you have to pour a thousand gallons of water down there?

A. To keep the dust out.

Q. A thousand gallons? A. Yes.

Q. That, of course, seeps on down through and

(Testimony of John Phillip Zannaras.)

wets it clear on down below?           A. No.

Q. What becomes of the water?

A. Evaporates or comes out with the ore that is taken out, evaporates most of the time or is taken out with the ore. [137]

Q. Mr. Zannaras, this shaft is a tube down in the ground into the fractured rock?

A. That is right.

Q. And it is set in an angle of approximately 75 degrees?           A. 70 degrees.

Q. And that is about—how big is it?

A. 10 by 8.

Q. 10 by 8, and you pour a thousand gallons in there and you say that that thousand gallons evaporates?

A. You put it on the ore. If you break the ore and pour the stuff in and it absorbs, that water, it will absorb it, and, of course, you have losses. Some of that will go down through cracks, through fractures, or some of that will keep down dust, and some of it will evaporate.

Q. How many days in the year '43, would you say you were running there?

A. Well, we mined considerable days, but I don't remember the exact number of days.

Q. Well, would you mine as much as 200 days a year?           A. I don't know.

Q. How long does it take an experienced miner to put down a foot of shaft? [138]

Mr. Lockwood: May it please the Court, I don't



(Testimony of John Phillip Zannaras.)

like to object, but I don't think the Court quite understood the nature——

The Court: I understood before you made your objection. I don't know whether that order of the Commissioner can be attacked collaterally. This is in for a different purpose. I have ruled on it once.

Mr. Cox: If this were immaterial it would be impeachment upon immaterial matter.

The Court: Well, we will see about that.

Q. (By Mr. Wilmer): How long does it take an experienced miner, Mr. Zannaras, to put down a foot of shaft in that type of formation?

A. It all depends on the facilities he has.

Q. You were pretty well set up for mining, were you?

A. Yes.

Q. You had good facilities?

A. Yes.

Q. You have approximately now how many feet of shaft?

A. About 50 to 60 feet.

Q. How long would an experienced miner, with good facilities, take to put down a shaft?

A. That wasn't put down in these [139] conditions. The conditions we put it down was different.

Q. You mean when you started you didn't have good facilities?

A. Well, we have to stop once and start again——

Q. I am not interested in that. How long would it take a miner with good facilities to put down a foot of shaft in that formation?

A. One man?

Q. Taking from good mining practices, what we call a foot.

(Testimony of John Phillip Zannaras.)

A. One man couldn't put down a shaft; he has to have a hoist; about three men at least to start a shaft like that.

Q. Well, when you were prepared to start your milling operation, you were already prepared to go, were you not?      A. Yes; worked three men.

Q. How long would it take three men working under normal conditions to put down a foot of that shaft?

A. Well, I should say—well, again, it depends on certain difficulties you may encounter in the ground.

Q. I am speaking of the formation there which you are very familiar with, I believe.

A. Yes, sir. Will probably take three [140] months.

Q. Will probably take three months to go a foot?

A. Not a foot; 50 feet.

Q. 50 feet?      A. Well, just about.

Q. 90 days to go 50 feet?      A. Yes.

Q. Now, what would you need to do to your mill there, Mr. Zannaras, to set it up for cyanidation?

A. Just put an agitator on the tank. We have a tank there.

Q. It is all set other than for that?

A. It is set in—

Q. I am asking you only about cyanidation first.

A. We have to put an agitator on the tank, zinc box, and a box for concentrating, zinc box for precipitating the gold.

Q. And for flotation, what would you have to do?

(Testimony of John Phillip Zannaras.)

A. Put flotation machines on, that is all.

Q. Put flotation machines on?

A. That is right, yes.

Q. Where would that be placed in your present setup?

A. It has a space for there provided for.

Q. Did you ever operate a cyanide plant?

A. No; I did not. [141]

Q. Did you ever work—operate a flotation plant?

A. No; I did not.

Q. The ore which you have exposed on this open cut on No. 19, Mr. Zannaras, have you ever had that assayed?

A. Yes.

Q. By whom? A. By the Ledoux.

Q. Mr. Ledoux? A. Yes.

Q. Where is that? A. New York.

Q. I mean, have you ever had it assayed by any local assayers?

A. No.

Q. The assay which you had made was from samples which you selected and sent to Mr. Ledoux?

A. I didn't select them. Mr. Gohring made the picking up of rock.

Q. Did you ever have any samples from your No. 28 shaft assayed locally?

A. I don't remember.

Q. Now, did I understand you to say that you had had considerable experience in setting up mills of this character for operation? [142]

A. I could put a mill up from engineering experience, yes.

(Testimony of John Phillip Zannaras.)

Q. Have you ever had experience in establishing and setting up a mill of this character before?

A. Which character?

Q. Like you have there at the Golden Rule or Gold Millsite.

A. Well, I had similar small plant in California.

Q. When? A. Back in '38, I think.

Q. You say a similar small plant. How big was that?

A. It was a different type of mill; it wasn't a ball mill. Grinding was different.

Q. Mr. Zannaras, the size of mesh in this mill that you have there, what size is that set for?

A. 10 mesh.

Q. 10 mesh? A. Yes.

Q. That is smaller than an inch, is that right?

A. Oh, yes; one-tenth of an inch.

Q. I mean the size of ore that it takes, is it a miner's inch and a half?

A. I don't get it. The size of which, of the classifying screen? [143]

Q. No; the size of the mill feed.

A. It runs as much as three and four inches. You can receive three- and four-inch ore.

Q. Would you say that you could put 50 tons of ore through that mill running sizes three and four inches?

A. That type of ore we have, yes, because it is soft.

Q. Now, do you know what a flow sheet is in a mill? A. What?

(Testimony of John Phillip Zannaras.)

Q. Flow sheet. A. Yes; I do.

Q. Isn't it customary, Mr. Zannaras, to ascertain the characteristics of your ore and were required to separate it from the rock before you set up a mill? A. Yes.

Q. The normal procedure is to find out through mill tests or milling and other plans what is needed for that particular ore? A. That is right.

Q. That was not done in this case?

A. It was.

Q. It was? A. Yes. [144]

Q. How was it done?

A. Well, it was done. I got a mill test from the American Cynamid Company. I got a mill test.

Q. You mean you sent a sample?

A. I sent a sample and I got a test.

Q. How big a sample?

A. Hundred pounds.

Q. And how was that selected?

A. That was the lowest we have, lowest grade ore.

Q. And on that one sample you set up your flow sheet?

A. Yes. The results were very plain that they can be concentrated by gravity process up to 80 per cent.

Mr. Wilmer: That is all.



(Testimony of John Phillip Zannaras.)

### Redirect Examination

By Mr. Cox:

Q. What type of diversion do you have for that water, Mr. Zannaras?

A. I have a pipe, suction type, into Burro Creek.

Q. Do you have an artificial sump there?

A. No; it is a natural sump.

Q. Now, after June 28th, was there any water in [145] your sump?      A. Yes; it was.

Q. Did you run the pump at any time after June 28th, 1948?      A. Yes; I did.

Q. When did you run it?

A. I ran it sometimes in September, in August, and in October.

Q. And was there sufficient water to run the pump?      A. No; there wasn't sufficient water.

Q. How long would the pump run?

A. Sometimes as long as—short as 10 minutes. In 10 minutes the suction—the foot valve will come out of the water and then the pump will draw air, and the pumping will stop.

Q. How close was your foot valve to the rock?

A. It was almost touching the rock, as close as possible.

Q. Was there any time between June 28th and December 2nd when there was sufficient water in the creek to run the pump normally?      A. No.

Q. You said it would take three men to operate

(Testimony of John Phillip Zannaras.)

in the shaft—two, I think you said, below and one above; three men lowering that shaft in one [146] day. How much can they remove in a day?

A. Working——

Q. Working with the present tools that you have.

A. Yes. Well, they could remove as much as—now, what is your question?

Q. How much lower can they lower the shaft in a day, three men working with your present tools?

A. I will say about a foot or something.

Q. I think you said it would take 90 days to—50 feet?

A. 50 feet; it would take about six inches—two days to a foot.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Cox: Call Mr. Seeds.

### ARTHUR J. SEEDS

was called as a witness on behalf of the plaintiffs, and, being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Cox:

Q. State your name. A. Arthur J. Seeds.

Q. Where do you live, Mr. Seeds? [147]

A. Colton, California.

(Testimony of Arthur J. Seeds.)

Q. Have you ever lived anywhere near Burro Creek?      A. Yes, sir.

Q. Are you familiar with Burro Creek near the Bonanza Wash?      A. Yes, sir.

Q. How long have you lived around—did you live around that country?

A. Well, I have owned some mining property and been in and out of there since, I believe, the Fall of '35—'35.

Q. And do you still have any interests up in there?      A. Yes.

Q. What interests do you have; I mean, what do you have up there?      A. Two gold claims.

Q. How long have you been doing mining, Mr. Seeds?

A. Well, mining and prospecting about 30 years or better.

Q. When did you come to Arizona?

A. 1906.

Q. What kind of ore do you have on your claims up near Burro Creek?

A. It is gold ore. [148]

Q. What type of ore is it, free milling ore or concentrated ore?

A. Rather both. Parts of it is free and parts of it would be concentrating.

Q. How did you know what type of ore it is, how do you know?      A. How do I know?

Q. Yes.      A. By experience in mining it.

Q. Have you mined any of the ore from your claims?

(Testimony of Arthur J. Seeds.)

A. I have a lot of it mined there now on top of the ground. I have never sold any.

Q. Has there ever been a mill up in there other than before Mr. Zannaras?

A. A small one; a small mill.

Q. What type of mill was that?

A. Stamp.

Q. And where was it?

Mr. Wilmer: I am going to object to this as being immaterial, can't have any materiality here. The plaintiff has testified he would not do any custom milling, so what difference does it make?

Mr. Cox: This is just preliminary so far. During that time that you lived around Burro Creek, have you had an opportunity to observe Burro [149] Creek? A. Oh, yes.

Q. You are pretty familiar with the country around? A. Part of it.

Q. What was the occasion of your becoming acquainted with Burro Creek, Mr. Seeds?

A. Principally to get water. We had to haul it from there.

Q. Have you noticed any change in the flow on Burro Creek recently? A. Yes.

Q. And what was that change?

A. Well, it was considerably lower than I had ever known it to be before. The fact is at that point, I never knew the water to be that low.

Q. You recall when Bagdad put in a diversion or pumping plant up on Burro Creek?

A. About the time, yes.

(Testimony of Arthur J. Seeds.)

Q. Was there any change in the flow on Burro Creek after that, as before?

A. Well, it seems to me the water was a good deal lower, although after about 1944 I did not have the opportunity to observe it much because the water was not fit to drink and we quit hauling our water from there. Naturally, I was not there too often, from that time on, only occasionally. [150]

Q. After '44?

A. I think it was about that time, yes.

Q. Have you had any occasion to see the creek since then?      A. Oh, yes.

Q. Have you ever been anywhere near Mr. Zannaras' place?      A. Yes.

Q. When were you down there?

A. I was there the 17th of last October.

Q. What was the occasion of your going there?

A. Well, I went down principally to have a talk with Mr. Zannaras about milling my ore, because while it is good milling ore, it was not rich enough to haul it out and that is the only mill there was any ways close enough. I thought I could get it done, so I went down to see him about handling my ore.

Q. Did you at that time examine Mr. Zannaras' mill?      A. Oh, yes.

Q. What type of mill is it?

A. Well, it is a ball mill, concentrating tables, and an amalgamator.

Q. From your examination of the mill there, did



(Testimony of Arthur J. Seeds.)

you feel that the mill was capable of handling [151] your ore?

A. That is one of the reasons I went down to see if I felt that it was capable, and I think it is.

Q. You think it is?

A. I do. That is my opinion.

Q. Was there any reason that the mill could not handle your ore?

A. Not that I know of, outside of water.

Q. Where does Mr. Zannaras get his water?

A. From Burro Creek.

Q. And now, is Burro Creek—what is its nature; is it sand or going into what type of formation?

A. Well, there is bedrock close there at that point, bedrock is very close.

Q. Did you see Mr. Zannaras' diversion dam, or what he has there?      A. Yes.

Q. Would you describe that to the Judge and tell him what that is like?

A. Well, it is merely a sump in the bedrock, I would taken it to be, and it is at a point where the water would be most likely to collect in quantity. It has a pipeline running from the pump down there with a suction valve on the end, and one of Mr. Zannaras' excuses about handling the [152] water was because he didn't have—or to handle my ore, he didn't have sufficient amount of water, and he started the pump up and wanted me to time it in order to find out for sure that he didn't have the water.

Q. Did you see the pump operate?

(Testimony of Arthur J. Seeds.)

A. Yes, sir.

Q. And what happened when they started to pump, Mr. Seeds?

A. Well, it worked very nicely for about 45 minutes and then drew air down in that suction valve and it would not take any more water.

Q. Could the suction valve been lowered to take any more water, or how close was it to bedrock?

A. It was close enough down that if it had been any more water in there it would have got it. I don't know whether I made any particular measurement of it, but it was well down.

Q. Was there water flowing back into the sump rapidly at that time?      A. No; very slow——

Q. Did you happen to stay around and see how long it took to fill up, or anything?

A. Oh, probably a half hour or more; it had not filled up yet, filling up for the suction valve to operate again at that time. [153]

Q. You say you were around there a half hour?

A. Yes.

Q. Do you use any water now from Burro Creek at all?      A. No.

Q. Something was said about pollution. When did you stop using the water?

A. It was some time in '44, as I remember, when we quit getting water there.

Q. Where did you get your water at Burro Creek?      A. At the crossing.

Q. Up at——

A. At the crossing on the highway where we got

(Testimony of Arthur J. Seeds.)

our water at that time on account of better road to haul it.

Mr. Cox: If the Court please, there is one further question which I recognize is objectionable and the Court has ruled, but we would like—on the milling, but we would like to file just for the record that this witness, should it become material, would testify that he had ore available and that five dollars per ton would be a reasonable charge for the milling.

The Court: All right.

Mr. Cox: You may cross-examine. [154]

### Cross-Examination

By Mr. Wilmer:

Q. Mr. Seeds, how long have you known Mr. Zannaras?

A. Well, I have since probably around '40, somewhere there, '41.

Q. I believe you were at Prescott at the other trial as a witness? A. Huh?

Q. Were you at Prescott at the other trial as a witness? A. No.

Q. Weren't you there?

A. No; I wasn't there.

Q. Now, I believe you said that you are a prospector, is that right? A. Yes.

Q. And you are presently living in Colton, California? A. I live in Colton now.

Q. How long have you lived there?

(Testimony of Arthur J. Seeds.)

A. About three years.

Q. Do you spend much time in Arizona?

A. Well, I spend usually two or three weeks out of every three or four months now.

Q. And who is working your gold claim? [155]

A. No one.

Q. It is not being worked?

A. No; it is not being operated at the present time.

Q. When did you quit operating it?

A. I never did operate it except to do development work on it for my own personal benefit.

Q. About how much development work did you do?

A. Well, I don't know whether I could say, but I done a lot of it.

Q. Are you familiar, Mr. Seeds, with the crossing at what is commonly known as the Kingman Crossing at Burro Creek? A. Oh, yes.

Q. Did you cross the road there crossing Burro Creek when you were up there last October?

A. No.

Q. Did you cross at any time in the Summer of '48? A. No.

Q. Have you ever crossed it when you have not seen water running below the crossing?

A. Well, I don't think I have.

Mr. Wilmer: That is all.

Mr. Cox: That is all.

(The witness was excused.) [156]

Mr. Cox: Mr. Thompson.

C. A. THOMPSON

was called as a witness on behalf of the plaintiffs, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Cox:

Q. State your name. A. C. A. Thompson.

Q. And were you with Mr. Seeds on the occasion he spoke of going to Mr. Zannaras' place?

A. I was.

Q. Did you see Mr. Zannaras' pump there and the sump in Burro Creek?

A. Yes, sir; we saw it in operation.

Q. Did you observe as to how long the pump ran, when he started pumping?

A. Yes, sir; about 45 minutes.

Q. It ran about 45 minutes? A. Yes.

Q. And then what happened?

A. Well, it just quit pumping. The water was down below the suction valve.

Q. There was no water in that sump then?

A. There was no water in the sump for it [157] to get that would pick it up.

Q. Did you stay until it filled up?

A. We was around there about half an hour, I guess, before we finally left.

Q. Had it filled up then?

A. Not noticeably, no; not so the pump would pick it up.

Q. And what was the date of that?



(Testimony of C. A. Thompson.)

A. That was the 17th of October.

Q. How do you place that date?

A. Well, we were down there doing our development work and had talked it over and we went down, just as we said; we intended to see if we could get our milling done by Mr. Zannaras.

Mr. Cox: That is all.

Cross-Examination

By Mr. Wilmer:

Q. Was there any water down below the sump that you noticed?

A. Oh, there was very little.

Q. Did you go down the river, down the creek any distance below Mr. Zannaras' place?

A. No.

Q. You don't know whether there was any water running down there or not? [158]

A. No.

Mr. Wilmer: That is all.

Mr. Cox: That is all.

(The witness was excused.)

Mr. Cox: The plaintiffs rest.

Mr. Wilmer: I have one witness, if it please the Court, who is here from Tucson, and I'd like to call out of order. He will be very short.

DEFENDANT'S CASE

BENJAMIN P. JACOBS

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Will you state your name, please?

A. My name is Benjamin P. Jacobs.

Q. What is your occupation? A. Assayer.

Q. Where is your office? A. In Tucson.

Q. How long have you been in that business?

A. I have been with my father for the past 20 years myself. [159]

Q. And, I believe, you do a great deal of assay work for all of the different large and small mine folks in the State, is that right?

Mr. Cox: We will admit Mr. Jacobs' qualifications.

Mr. Wilmer: Would you mark that for identification?

(The document was marked as Defendant's Exhibit A for identification.)

Q. (By Mr. Wilmer): Mr. Jacobs, prior to August 14, 1948, did you receive three samples, two of ore and one of concentrates, from the Bagdad Copper Corporation?

A. We received some samples marked that way. Whether they were concentrates, we don't know.

Q. They were mailed to you? A. Yes.

(Testimony of Benjamin P. Jacobs.)

Q. And you took those samples and assayed them?      A. Yes.

Q. Showing you Defendant's Exhibit No. A for identification, will you state whether or not those were the results of the assay of those three samples?

A. That is correct.

Q. How large were the samples?

A. The samples were bulks averaging about a half pound. [160]

Q. I mean the aggregate of each sample was how much?

A. Each sample was approximately a half pound in weight.

Q. And in bulk?

A. Well, in bulk it was, oh, I'd say, a cup, was a regular teacup.

Q. Have you done quite a little bit of assay work, Mr. Jacobs?      A. I have done it, yes.

Q. Are you familiar with what is known as commercial grade ore of tungsten and shelite in commercial quantities?      A. Yes.

Q. These samples that you received, Mr. Jacobs, had been crushed?

A. Crushed and pulverized, they were finally pulverized.

Q. Two were labeled "ore" and one was labeled "concentrates"?      A. That is right.

Q. And during August of '48, did you receive any other samples from the Bagdad for assay?

A. I don't remember; I don't think I have.

Q. What is regarded, or can you tell me, Mr.

(Testimony of Benjamin P. Jacobs.)

Jacobs, what is considered as tungsten in [161] commercial quantities, what percentage?

A. Well, that is a very complicated answer or question and I can't answer it because you have to take into account all the mining costs, milling costs, and the regular value of the ore itself once you get it.

Mr. Wilmer: Well, that is all. I don't intend to offer this at this time.

### Cross-Examination

By Mr. Cox:

Q. Is a cupful a sufficient amount to form any conclusion on, Mr. Jacobs?

A. A cupful—the sample of the analysis is taken according to the grade of ore, see?

Q. But, I mean, a cupful of material of any type having been analyzed would give no conclusion at all as to anything, the surroundings or anything else?

A. It all depends on how that cupful is selected; this sample can be representative so long as it is finely ground.

Q. The actual test of what the ore will run is only—comes after the sale of fairly sizeable quantities of ore, is that correct?

A. That is one way of looking at it. [162]

Q. I show you Plaintiffs' Exhibit 7 in evidence and ask you if you are familiar with similar sheets?

A. That is right.

(Testimony of Benjamin P. Jacobs.)

Q. Would you say that ore that contained that run would be profitable for milling?

A. In this case where the Metals Reserve was buying ore, it is a different case. They were, if I remember correctly, they were buying ore and giving the miner the benefit of many other expenses than their regular mine would pay.

Q. But on the percentage of ore, would you say that that ore was profitable ore?

A. For the Metals Reserve, for this settlement sheet, it would be all right. Now——

Q. Now, wait just a minute, Mr. Jacobs. Would you say that that ore would be profitable ore to mill?

A. I could not say. I could not say before making an examination of the recovery, a mill test.

Q. Mill test?           A. Yes.

Q. And if a mill test showed recovery at about 80 per cent, would it be profitable ore to mill?

A. You have to take into consideration the mining cost and other things. [163]

Q. Did you ever run any test for Mr. Zannaras?

A. I don't remember running it by that name. He may have sent us by another name, company name or something, but that name is not familiar to me.

Q. What would the mining costs have to be; how high would they have to be to make this type of ore unprofitable for milling?

A. Well, if this gave you \$36 a dry ton, so you



(Testimony of Benjamin P. Jacobs.)

got \$36 to play with. You can mine it for \$25 and make money.

Q. You mean if you spent \$25 for mining you could make money?

A. Yes; if you are going to sell it to the Metals Reserve, there is no other deduction for it.

Q. If it should appear that the mining cost was about \$6 a ton, would that appear to be very profitable ore?      A. Absolutely.

Q. And would that be the same if that ore ran down to one per cent instead of 1.92?      A. Yes.

Mr. Cox: That is all.

### Redirect Examination

By Mr. Wilmer:

Q. You mean that if you could mine for a [164] price of \$6 a ton and get the price the Metals Reserve was paying, that would be a good deal?

A. That is right. I was basing myself on what the Metals Reserve required per value per unit at that time, that the Metals Reserve was paying.

Q. They were giving many, or, rather, giving the miner the benefit of many——

A. Very much so. There weren't any penalties, where it is customary when you concentrate, say, if they penalize so much for copper and so much for lead. You have to analyze concentrates in order to sell them nowadays to big companies.

Q. In other words, it would be a pretty good deal for the miner to sell it to the Metals Reserve, rather than sell it to the smelters?      A. Yes.

(Testimony of Benjamin P. Jacobs.)

Recross-Examination

By Mr. Cox:

Q. The penalties are from either metals, you say, from copper and so forth?

A. Yes; they are at present.

Q. Now, the price of tungsten per unit has been unchanged up until the last ten or fifteen days, hasn't it?

A. Oh, no; oh, no; I think, if I am correct, if I remember right, the price that the Metals [165] Reserve was paying was either thirty or thirty-five dollars a unit.

Q. But recently it has been \$28.50?

A. No; not that I know of.

Q. What has it been?

A. Probably about 20 or 22. What you actually get the miner is one thing, and the quotation is another. Now, that is your basis. If I am an ore buyer, I buy tungsten ore here and I pay \$20, and if New York pays 25 over there, that is your basis.

Q. I am talking about concentrates having been milled.

A. There is no one who buys ore right now that I know of. There is a lot of people that buy tungsten concentrates running 60 per cent or better.

Q. On what basis do they pay for this?

A. They pay on the average of 20 or 22 dollars a unit, minus any penalties.

Q. Would that ore shown on that report, as-

(Testimony of Benjamin P. Jacobs.)

suming a one per cent ore and a mining cost of six dollars, would that be profitable at \$22.50?

A. Well, you have to figure, they are being very good if they recover 80 per cent of that, very good; they are doing very good at \$20 a unit. \$16 is what you are actually recovering and a cost of six dollars a ton to mine. Assuming it costs [166] six dollars, that would leave you \$10 for transportation and marketing of your concentrates.

Q. Still it would be a profitable proposition even at that? A. I suppose it would.

Mr. Cox: That is all.

Mr. Wilmer: That is all. May the witness be excused, your Honor?

The Court: Yes.

(The witness was excused.)

Mr. Wilmer: Mr. Dickey.

ERNEST R. DICKEY

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. Your name, please?

A. Ernest R. Dickey.

Q. You reside at Bagdad? A. Yes, sir.

Q. What is your connection with the Bagdad Copper Corporation? A. General manager.

Q. You are in charge of all of their operations at

(Testimony of Ernest R. Dickey.)

Bagdad, is that right? [167]                      A. Yes, sir.

Q. How long have you had that responsibility, Mr. Dickey?                      A. Since September 1st, 1944.

Q. And prior to that time, were you at Bagdad?

A. No, sir.

Q. That was when you took over, is that right?

A. Yes, sir.

Q. The management of the corporation?

A. That is right.

Q. I believe there was a complete new management at that time, is that right?                      A. Yes, sir.

Q. And it has been since you developed this open pit operation?                      A. Yes, sir.

Q. How long have you been engaged in the mining business, Ernest?

A. Well, I was born in mining districts, raised in mining districts, and I would say that truthfully I have been sort of working at various capacities ever since I left school.

Q. Did you do any particular studying toward—in the field of metallurgy or in mining?

A. I was continuously studying about six years during—from '24 to '30. I put in six years in [168] actual studying under engineers at Jerome on copper porphries and open pit method and other methods of mining.

Q. Then after that, Mr. Dickey, what responsibility have you had—particular mining experience have you had since then?

A. After that time I changed occupations and went to work for the United Verde Extension as

(Testimony of Ernest R. Dickey.)

Consulting Engineer until they was ready to close the mine down, because the ore reserves were exhausted.

Q. That was at Jerome?

A. At Jerome also. I went from there to the Vulture Mine out of Wickenburg. I was Consulting Engineer first for the U.V.X. They was interested in it for a year or two and then they gave it up and then I took a lease on it myself.

Q. How long did you stay with the United Verde as Consulting Engineer?

A. Two years.

Q. You were at the Vulture how long?

A. From '41 to '44.

Q. And you went from there to Bagdad?

A. Bagdad, that is right.

Q. You then have worked as Consulting Engineer in the active operation and management of mining [169] properties?

A. Yes, sir.

Q. How big an operation was it at the Vulture?

A. Requiring about 40 to 50 men, milling 250 to 300 tons a day.

Q. You supervised the entire operation?

A. Yes, sir.

Q. Now, at Bagdad, I believe, you said you have been there since '44?

A. Yes; September 1st.

Q. How many men do you have employed actively under you there?

A. About 250.

Q. Approximately what amount of ore do you handle there?

A. 3,000 tons a day.

Q. Now, with respect to the location of the mine



(Testimony of Ernest R. Dickey.)

at Bagdad, with respect to Boulder Creek and Copper Creek?      A. Yes, sir.

Q. Where is it situated?

A. Copper Creek is a small tributary that runs right through our property and joins in at Boulder Creek about three miles below the Bagdad Mine. Boulder Creek, then, in turn, runs into Burro Creek about three and one-half or four miles below the junction of Copper Creek, and just before [170] the Bagdad pick-up pump.

Q. Those streams run in generally a southwesterly direction?

A. Mostly west from Bagdad to Boulder and from Boulder it may run a little more further.

Q. They ultimately feed into the Big Sandy and Bill Williams?

A. Yes, sir; into the Big Sandy and Bill Williams.

Q. The creek you referred to as Copper Creek, is that a running stream at any time?

A. No, sir.

Q. It is a dry wash?      A. Yes, sir.

Q. Has no headwaters other than drainage and rainfall?      A. During stormy weather, yes, sir.

Q. After you came to the Bagdad in September, 1944, Mr. Dickey, I think you rearranged the disposal of tailings, is that correct?      A. Yes, sir.

Q. And likewise, rearranged to some extent the method of securing water for mining, is that right?

A. Well, you might state it that way, if I may be allowed to explain. The prior management, [171]

(Testimony of Ernest R. Dickey.)

in designing the plant and the disposal of tailings, installed a large seven-inch trestle line three and one-half miles downstream and ran the tailings from the mill to that point and stored them on the bank of Boulder Creek. It was a costly operation to keep the pipeline maintained, to keep it from breaking down, also there wasn't a chance of reclaiming any water. At that time we was interested in reclaiming all the mill water possible, because there wasn't any saving in re-agents at the same time other than in having to pump water from Burro Creek seven and one-half miles. Therefore, we began construction of a tailings pond right at the millsite within twelve or fifteen hundred feet, and from that date on we have continued to store our tailings right at the property at the millsite.

Q. Would you, if you could, give us a little better picture of it, Mr. Dickey, and draw here relatively accurate, if you can, Copper Creek, Boulder Creek and Burro Creek?

A. Boy, I am not an artist. (The witness complies.)

Q. (By Mr. Wilmer): The square that you have drawn there represents approximately the Bagdad property? [172]

A. Yes, sir. This little tributary there represents Moroney Gulch. That is a small gulch here that has a total length of approximately two miles, and it is in this gulch that we built a tailings dam.

Q. In other words, you dammed the mouth of Moroney Gulch into Copper Creek?

(Testimony of Ernest R. Dickey.)

A. Yes, sir.

Q. The mill and the balance of your operation there lay on which side of Copper Creek, then?

A. Right in here (indicating on diagram). That would be the mill, approximately, and the open pit area is across the creek.

Q. Across Copper Creek?

A. Eventually the pit will extend across the Creek, of course, because up here it is across the creek. Right now the mill is on the south side of Copper Creek.

Q. In placing of that dam across Moroney Gulch, you call it?      A. Yes.

Q. Approximately what amount of material was moved in there?      A. Two million yards.

Q. And it was approximately that time when you started to make this change that you heard [173] from Mr. Zannaras? Is that right?      A. Yes.

Q. Now, Mr. Dickey, showing you Plaintiffs' 4 for identification, which appears to be a picture of the tailings pond?      A. Yes, sir.

Q. Which end of the tailings pond is that?

A. Its upper end—that is looking at it about south—a little west of south from up on the road going out of camp. The dam is down here to our right, down in a narrow neck, right in here, and this would be tailings, the rest of this is all water (indicating on photograph).

Q. The way you have that arrangement there, I believe, Mr. Dickey, the tailings now are run directly from the mill and are dammed behind this dam?

(Testimony of Ernest R. Dickey.)

A. Yes, sir.

Q. What do you then use the water for?

A. We use the water over and over in the mill for our milling operations.

Q. You mean that the tailings are such that you can pump water back out and use it in your mill there?

A. As the tailings go into the dam, they go in there with approximately 30 per cent solids, [174] the balance being water, and after it sets in the pond awhile, the tailings settle and it leaves clear water for us to use over again.

Q. In other words, you keep circulating your water which is supplemented by fresh water from Burro Creek, is that right?      A. Correct, sir.

Q. Do you know approximately how many gallons of water per year you use out of the tailing pond?

A. Oh, 60 to 80 million gallons. Approximately a million gallons a day that we recirculate and use over and over.

Q. Approximately how many gallons of fresh water do you require per day, or do you have per day?

A. Well, let's see, the maximum we can take, if I may state it that way, is about 600 gallons a minute if the pumps are working at full capacity and full efficiency, and I believe if we was operating the pumps 24 hours a day, it would pump in the neighborhood of 300 million gallons, but from our calculations where we don't use meters or anything of



(Testimony of Ernest R. Dickey.)

that type around the plant, it is conservative to say that we don't use over five or six hundred thousand gallons of fresh water a day, of which 100,000 gallons is set aside for [175] domestic purposes.

Q. I believe in the camp at Bagdad there, there are quite a number of residents?

A. Yes, sir.

Q. Quite a number of families live there?

A. Yes, sir.

Q. Are they supplied with domestic water?

A. Yes, sir.

Q. Is there any charge made for that?

A. No, sir.

Q. The entire use of water which is gotten from Burro Creek for domestic purposes is solely, then, for the domestic use of the miners and people working at the mine; that is, the executives?

A. Solely used, you say?

Q. What other use does it have?

A. We have to add fresh water to our milling circuit, and it requires probably in the neighborhood of 400 to 500 thousand gallons a day, at the maximum, because at our tailing pond there is an enormous amount of evaporation that has to be replenished.

Q. Plus other losses in the milling process?

A. Yes, sir.

Q. Now, Mr. Dickey, I believe that in the summer of '48, last year, you learned of some [176] complaint which Mr. Zannaras had with respect to water at his mill, did you?

A. Yes, sir.



(Testimony of Ernest R. Dickey.)

Q. What did you do?

A. Well, naturally being interested in our district on the various items, especially on sanitation, I traveled around to see what the conditions are, and having heard about this complaint that there was no water at the Zannaras Millsite, I asked Mr. George Green to accompany me and we took a trip down to the Zannaras Mine, and we drove up to the camp and it didn't seem to be anyone there. We went over to the house and knocked on the door and a lady came to the door. I introduced myself and Mr. Green and told her who we were and why we were there, and that we would like to visit with Mr. Zannaras, and she said that they were in town, had been for two or three days. I asked her if it would be all right with her if we looked the property over and go down to the mill and look it over and take pictures of whatever was necessary. She says to go right ahead, so we did. We looked the mine over, and I had seen it on previous occasions, I could not honestly say that I have seen it put into actual development. [177]

Q. When had you seen it previously, Mr. Dickey?

A. Well, that is going to be hard to say for sure. Probably before that, or about a year and a half before that I drove over there, then another time was back in '44, and I inspected the property. The property is developed, if I might continue, by a shaft, which is now probably 45 or 50 feet deep, timbered, and has a small hoist, I didn't pay par-

(Testimony of Ernest R. Dickey.)

ticular attention, but I think it is about a 15 horse power Fairbanks Morse hoist; has an Ingersoll Rand Compressor, probably 210 cubic foot compressor, and skids, has a frame over the shaft and has a mine car, a trestle for the mine car to take the ore out and dump it into a truck. He has some other things and a little camp there. I notice they have built a new building there which I took it that is their laboratory.

Q. That was when?

A. July, if I may look at my notebook.

Q. Sure.

A. Because I wrote a lot of these things down as I go.

Mr. Cox: May I ask the question, Mr. Dickey: You have independent recollection of the day, or will the information in your notebook be the best [178] information?

A. Well, I have a recollection, I believe it is around about the end of July, 27th or 28th, but I just want to be sure.

Q. You made notes at the time?

A. Yes, sir; July 27th is right.

Q. (By Mr. Wilmer): Mr. Green is connected with the Company, is he?

A. He is our mill superintendent.

Q. In the years of experience that you have had, Mr. Dickey, has it become rather necessary that you get acquainted with water flows and judging the amount of water running in a given stream?

A. Very much so.

(Testimony of Ernest R. Dickey.)

Q. Have you had experience along those lines?

A. Yes, sir.

Q. In any particular respect?

A. Well, I might state one particular respect. It has to do with a water right that my mother owns up in the Walapai Mountains. The railroad was contesting us on that water right, and we didn't have any specific information as to the exact amount of gallonage that the spring would make or would flow down creek, and we estimated it, and that was my job, and we applied for the [179] water that was being used there, and as it came out, why, evidently my estimate was very close. Another instance right here at Bagdad. We have seepage that runs out from under our tailings dam. I had estimated that that seepage amounted to 80 gallons a minute flowing down Copper Creek. We had some discussion with other parties there about that quantity of water, so a weir box was installed to measure the water, and we measured the water, and it was 84 gallons a minute, so I don't figure I missed too far.

Q. Did you go down to the Burro Creek down below the Zannaras Mill?      A. Yes, sir.

Q. And for the purposes, I take it, of seeing what the water situation was?      A. Yes, sir.

Q. Did you find what the situation there was?

A. I did, sir.

Q. What did you find?

A. Well, I was surprised that——

Mr. Cox: Just a moment, just tell what you saw there.

(Testimony of Ernest R. Dickey.)

A. Okay. I was going to try to. I was surprised that there was water there, because of all the things I had heard that the place was dry, and [180] naturally, we took pictures of it which I expect you have there. The creek coming into this Zannaras Millsite is filled with boulders, large boulders, gravel. It is hard to determine how much water would be running under the surface of the creek channel, and we examined the intake at the pump. He has a two-inch pipe intake foot valve. The pipe hangs into a depression among the boulders there into the water, and on below that, oh, just a matter of a foot—you might say a few feet, up to three or four hundred feet, there was quite large bodies of water. There was a considerable flow running out of those pools, so evidently the water was coming into those pools there. I had estimated at that time about a hundred gallons a minute.

Mr. Cox: That is not an answer to the previous question, I don't think, and I will ask it be stricken.

The Court: What part is that?

Mr. Cox: Where he says what his estimate is. He is now attempting to give his estimate.

Mr. Wilmer: Let's strike that.

The Court: All right.

Mr. Cox: All right.

Q. (By Mr. Wilmer): Mr. Dickey, would you be able [181] to estimate the amount of the flow of water flowing into the channel there; that is, the amount of water flowing as distinguished from the water standing in the pools?



(Testimony of Ernest R. Dickey.)

A. The only way you could tell that is by the water flowing out of the pools.

Q. Did you observe that? A. Yes, sir.

Q. What did you observe?

A. About 100 gallons a minute——

Mr. Cox: Just a moment. Are you asking for an observation? I'd like to ask a question on voir dire.

Q. Mr. Dickey, your two experiences with estimating the flow of water were on your mother's place, and you say that you evidently came out fairly close there. The other time was when you estimated that it was 80 gallons per minute when it was 84? A. Correct.

Q. And those were two times?

A. I was not asked how many times I had made estimates. I was asked to give an illustration.

Q. Now, is this estimate based upon that knowledge?

A. Yes, and from knowledge I have gained over [182] my years of experience.

Q. What other basis do you have for estimating that, Mr. Dickey?

A. Well, sir, I have been connected with mines in this country for a good many years, and we have the problem of taking water out of most mines. We have to put in our pumps, pump the water out, and most of the time it runs out to waste and it is very easy there. We know. We put in a pump at the hundred gallons a minute and we can see that water running down the creek or hillside, and we know



(Testimony of Ernest R. Dickey.)

what we are doing, and in other cases may be smaller or larger amounts.

Q. And how much experience—how many times have you observed that condition, Mr. Dickey?

A. At Burro Creek?

Q. No, the estimate, I am just trying to get your experience.

A. Oh, goodness gracious, that is something hard to say. It would be just a wild guess. Numerous times.

Q. Did your engineering experience help you in that, too?      A. Yes, sir.

Q. Are you acting as an engineer at Bagdad in any way? [183]

A. No, sir, I am the general manager over all operations.

Q. In estimating the water, it is commonly——

A. In gallons or in——

Q. I just say, how much in volume?

A. I don't even remember now. I am going to just let you have that one.

Q. You don't know how many gallons it is?

A. No, I won't say because it has not been very long I looked it up, but it sure slipped my mind.

Q. That is the usual miner's measurement of water?      A. Correct.

Q. But your experience is all based on your——

A. The size of the flow, yes, sir.

Mr. Cox: That is all—I have one more question.

Q. Are you, or have you ever been registered

(Testimony of Ernest R. Dickey.)

under the technical Arizona State Technical Registration Act?           A. No, sir.

Mr. Wilmer: Is that all?

Mr. Cox: That is all.

Q. (By Mr. Wilmer): Now, Mr. Dickey, so that Mr. Cox can have the benefit of your experience, how [184] much of a volume of flow of water does that amount to? In other words, could you tell me approximately how wide or how deep the stream of water was that was moving out of the pool?

A. In this particular instance, the water running out of the pool down below Zannaras millsite was a space there of about 20 to 22 inches wide, oh, probably an inch deep.

Q. I show you Defendant's No. E for identification. I notice there is some printing on the back of that?           A. Yes, sir.

Q. Was that put on there by someone; I mean did you put it on there?

A. I wrote this on here, yes, sir.

Q. That simply states the direction from which you were standing and the view that is shown on the face of the picture?           A. Yes, sir.

Q. Was that taken at that time?

A. Yes, sir.

Q. And does that accurately show the water that was there in that sump or the vicinity?

A. In the creek just below the pump suction.

Q. Since the pictures are a little bit confusing, Mr. Dickey, can you tell us approximately how long [185] that pool of water is that is laying there?

(Testimony of Ernest R. Dickey.)

A. Well, there is more than one pool. You can see here. The pool comes together here and it starts out again and goes in by the brush there. In all, I would say the picture there covers up about 100 yards of area, has water pools on it.

Q. Do you know how deep it was?

A. No, I wouldn't say for sure. Some places three to four feet, I know.

(Thereupon documents were marked as Defendant's Exhibits B, C, D and E and F and G for identification.)

The Court: The Court will suspend at recess until 10:00 o'clock tomorrow morning.

(Thereupon a recess was taken at 5:00 p.m.) [186]

10:00 A.M., March 4, 1949

All parties as heretofore noted being present, the trial resumed as follows:

Mr. Wilmer: To get the record straight, we offer at this time Defendant's Exhibit E in evidence.

The Court: Any objection?

Mr. Cox: No objection.

(Thereupon the document was received and marked as Defendant's Exhibit E in evidence.)

ERNEST R. DICKEY

resumed the witness stand and testified further as follows:

Direct Examination

(Resumed)

By Mr. Wilmer:

Q. Mr. Dickey, I hand you Defendant's B for identification, and also a picture. Will you state whether or not that was taken on the 27th of July of the creek below Mr. Zannaras' mill and at or near his point of diversion?

A. Yes, sir; it was.

Q. Who is that standing in the picture?

A. George Green.

Q. Now, Mr. Dickey, that is looking in [187] which direction up or downstream?

A. This is looking downstream, George Green is standing at the intake, pump suction.

Mr. Wilmer: We offer Defendant's Exhibit B for identification in evidence.

Mr. Cox: No objection.

(Thereupon the document was marked as Defendant's Exhibit B in evidence.)

Q. (By Mr. Wilmer): Mr. Dickey, can you estimate the approximate amount of water that in your opinion was in that one pool?

A. In which pool, now?

Q. The pool which is beyond George Green.

A. Downstream from the suction——

Mr. Cox: Just a moment. You mean the pool shown in the picture?

(Testimony of Ernest R. Dickey.)

Mr. Wilmer: The pool shown in Defendant's B in evidence.

Mr. Cox: On voir dire.

Q. This is, you say, taken from the point of diversion?

A. No, Mr. Green is standing at the suction.

Q. And then——

A. Looking downstream.

Q. Looking downstream, and these pools shown downstream, you said the other picture was taken [188] about 30 feet downstream, E.

A. I'd have to look at the picture again and see (looking at photograph). No, not this one. This one (indicating picture), I was standing right here on this rock beside this suction. Here is the same stick here, only I am standing over on this way——

Mr. Wilmer: Might I say, Mr. Cox, that on the back of each of these pictures is the point at which it was taken, the position.

Mr. Cox: The picture, then, of these pools down here are shown in E?

A. Yes, sir.

Q. That is a close-up of these pools?

A. Yes, sir.

Q. And did you put anything in the—shown in E, the dry places or sand that is up above the pools?

A. No, that is vegetation.

Q. Vegetation? A. Yes, sir.

Q. And the water shows the reflection, places where there isn't that reflection, is that vegetation?

A. Well, I wouldn't say for sure all of that.



(Testimony of Ernest R. Dickey.)

These darker spots like this area is vegetation. [189]  
This is clear water. Over here, this would be clear water in between vegetation. This is where the light would be reflected on the pond as the kodak took the picture.

Q. This is not water here?

A. That is vegetation growing in the water, moss and other algae, and so forth.

Q. And the same on down——

A. That would be true, yes, sir.

Q. Did you measure these pools?

A. No, sir.

Q. Did you measure the depth of the pools of the width of the pools or the length of the pools?

A. No, sir.

Mr. Cox: We object to the question, as there is no basis for estimating the pool of water by looking at the surface of it unless you have had some determination of the depth, width and the size of it.

The Court: Ask him whether he has any such determination.

Mr. Cox: He just said—Oh, did you make any determination of it?           A. Yes, sir.

Q. How? [190]

A. Oh, the same way if someone was to ask me the question of what would be the dimensions of this room. I would make an estimate as to the size.

Q. Now I believe you are speaking now as an engineer?

A. Well, from practical experience, sir.

Q. In the room you can see the length, depth

(Testimony of Ernest R. Dickey.)

and width, can you not?           A. Correct, sir.

Q. Is that true in a body of water?

A. I would say I could see the width and the length and in places where the water was clear I could see the bottom.

Q. Now, where you can see the bottom of a pool, can you tell how far it is by having clear water?

A. Estimate it; I wouldn't know.

Q. With what degree of accuracy, Mr. Dickey?

A. Oh, I would say within 75 per cent. It depends on the depth of the water. Shallow water would be more easy to estimate correctly than deeper water.

Q. This is all below the point of diversion we are speaking of now?

A. This particular pool we are talking about yes, [191] sir.

Mr. Cox: The same objection.

The Court: He may answer.

A. I would estimate that that pool had not less than 60,000, probably not more than 100,000 gallons of water.

Q. And that pool, Mr. Dickey, is immediately adjacent to the point of diversion of Mr. Zannaras'—below it?           A. Yes, sir.

Q. Now, did you observe the point of diversion which Mr. Zannaras has; that is, did you take a picture, I should say of that intake that he has there?

A. Yes, sir.

Q. Is that reflected in Defendant's D for identification?           A. Yes, sir. This is the suction.

(Testimony of Ernest R. Dickey.)

Q. And with respect to that same manner, does Defendant's C for identification reflect Mr. Green standing and looking down at the diversion—the point of diversion? A. Yes, sir.

Mr. Wilmer: We offer Defendant's D and C for identification in evidence.

Mr. Cox: No objection to Defendant's D. [192]

(Thereupon the document was received and marked as Defendant's Exhibit D in evidence.)

Mr. Cox: On voir dire.

Q. On Defendant's C, you took the picture upstream? A. Correct.

Mr. Cox: No objection.

(Thereupon the document was received and marked as Defendant's Exhibit C in evidence.)

Mr. Wilmer: Mr. Dickey, in good mining practice, what is the usual method for setting up a point of diversion when you are seeking water or drawing water out of a stream of this character; what, generally, do you do with respect to providing a sump or other place to provide for the water to accumulate?

A. In good mining practice, I would say that very seldom, unless the water is constant and clear, would they pump out of a stream direct. They would construct or dig a suction hole or sump beside the stream and let the water filter through gravels into this sump and the suction would be put into that sump hole and the water pumped directly from that.

(Testimony of Ernest R. Dickey.)

Q. How much expenditure or work would be involved to change the set-up of Mr. Zannaras' place [193] there to give him a reasonably efficient suction arrangement which would secure for him any water which was coming down the stream?

A. From my observations, the creek bottom, as the pictures will substantiate, is filled with gravels and boulders of various sizes up to enormous sizes, and it would be really hard to say definitely how deep a person would have to dig that hole to get to the water channel or on bedrock, but I would make an estimate that a sump hole dug beside the stream 10 or 12 feet deep would give him ample water supply and would not be endangered by the normal water flows from the creek. The only time it could harm him in any way would be high water flow, such as it would then fill up the hole and it would have to be cleaned out again.

Q. Now, Mr. Dickey, in the summer of '48, did you have occasion to use the crossing known as the Kingman Crossing on Burro Creek?

A. Yes, sir.

Q. What was the occasion for that?

A. I had to take our construction superintendent to Kingman to look over a building that we had purchased at the Kingman Air Field preparatory to dismantling and moving it to Bagdad. [194] The fact of the matter, it was cheaper. We took the Burro Creek Road, which we call the Kingman cut-off, because that saves about a hundred miles. On

(Testimony of Ernest R. Dickey.)

that particular day, it was July 16th. When we crossed Burro Creek at the Kingman Crossing, there was about four inches of water flowing at that crossing. The water in the ruts, where the cars had traveled back and forth, the water was somewhat deeper, I would say from recollection, probably 10 inches deep, but that would just be——

Q. Standing water?

A. Standing water, yes, sir.

Q. This four inches of flowing water that you observed, where was that with respect to the crossing itself?

A. On the downstream side.

Q. How close to it?

A. Oh, within eight or ten feet where the tracks of the road would be.

Q. Now, how wide was that flowing stream?

A. I would estimate it at about four to six feet. Now, it is very hard to give you a definite, accurate answer, because there is rocks and boulders and stuff like that in along the area there, and the stream was actually with water running somewhat wider than that and in places [195] maybe somewhat deeper, and in other places a good deal more shallow.

Q. As a matter of fact, Mr. Dickey, is there a place below the Bagdad sump where the Burro Creek disappears entirely in a dry year?

A. Right at the sump where we pump our water out on the downstream side is gravel. We have not determined how deep that gravel is yet, and the water, at low dry seasons, disappears from the sur-



(Testimony of Ernest R. Dickey.)

face into that gravel and again reappears downstream about two to three hundred yards below the pump, at which time—at which place, I had better say, I have never seen the creek dry.

Q. Referring now to Plaintiffs' 2, 5 and 6 in evidence, which appear to be pictures of the Bagdad sump——

A. Yes, sir.

Q. ——will you state whether or not at that time, Mr. Dickey, two to three hundred yards below that, Burro Creek reappeared on the surface as a flowing stream?

A. Yes, sir.

Q. On below was the sump?

A. Yes, sir. This is gravel, which would tell you about where the water disappears.

Q. When you say "this," you are referring to [196] the picture in the foreground of Plaintiffs' 6?

A. Yes. That is downstream from our suction pump there.

Q. Now, further down Burro Creek and above the Kingman cut-off Crossing, does the Burro Creek again disappear?

A. Yes, sir.

Q. Where does it reappear?

A. Well, two or three different observations I have made at various times since I have been at Bagdad, one time was walking the full distance through to the ranch, which is a couple of miles below, the water appeared, as I stated before to be, oh, from two to three hundred yards below our pump intake. It reappeared there and runs there for a distance of about a quarter of a mile, then disappears

(Testimony of Ernest R. Dickey.)

again, and this particular time I am stating was about the driest season that I know of, and the water just then seemed to just show in small shallow pools at various points along the creek to quite some distance below the ranch, and there wasn't any water at the ranch running on the surface at that time. Above the Kingman Crossing a quarter of a mile, quite a substantial flow of water appeared again and ran all the way across the Kingman Crossing and on [197] down below Kingman Crossing, went on down about a half a mile, and the canyon becomes solid rock and very little gravel and boulders in it in comparison to what it was above the Kingman Crossing, which appeared to be quite a volume of water, deep holes.

Mr. Cox: Could I fix the date of this time? I didn't quite——

Q. (By Mr. Wilmer): Do you recall when it was that you made this trip down the canyon?

A. It was in the summer of '47, which was really our driest year.

Q. Was '47 drier than '48? A. Yes, sir.

Q. That is from the standpoint of rainfall?

A. Yes, sir.

Q. I take it, Mr. Dickey, that through the summer particularly you were somewhat concerned with your water supply, and that is one of your reasons for observing the creeks pretty closely?

A. Yes, sir.

Q. Did you have any further occasion to use Kingman Crossing through the summer of '48 or

(Testimony of Ernest R. Dickey.)

spring of '48?           A. No, I didn't.

Q. Now, Mr. Dickey, in August of '48, in [198] co-operation with the Reclamation Service, did you have occasion to put a gauge in Burro Creek?

A. Yes, sir.

Q. Where was that gauge placed?

A. Placed in the pool that we pump out of on Burro Creek.

Q. And under whose direction was it placed?

A. By Mr. Kaser from the Bureau of Reclamation, and under the immediate supervision of Mr. Deacon, who is a representative and does the recording of the rainfall, and so forth, for that district.

Q. I believe, for a good number of years there has been a Weather Bureau station at Bagdad, is that right?           A. Yes, sir.

Q. And Mr. Deacon has been the observer for the Water Bureau, is that right?

A. Not all of the time.

Q. In the recent years, though, I will put it that way?           A. Yes, sir.

Q. How was this placed in Burro Creek, Mr. Dickey?

A. The gauge was placed so that the zero level of the water as it flowed out of this pool, [199] in other words, at zero, there wouldn't be any water flowing out of the pool on the surface.

Q. And that was placed in there at approximately what time, do you recall; do you remember the date?

(Testimony of Ernest R. Dickey.)

A. It was placed in about the middle of August, surveyed or cross-sections made until the first of October.

Q. What was done with respect to determining how the gauge should be read with respect to the amount of water moving in the creek bed?

A. Our engineering department made the surveys and the cross-sections as to widths and depth of the creek at that point, at the gauge, and from those surveys the Bureau of Reclamation prepared the chart showing the actual amount of water flowing on the surface.

Q. Were those computations made at or in Arizona?

A. I don't believe they were. I wouldn't say for sure.

Q. Do you know who those readings were——

A. Sir?

Q. The survey readings were sent to somebody?

A. Yes, sir, Mr. Kaser.

Q. Was Mr. Kaser himself personally at the [200] mine on August 10th or 11th, '48?

A. Well, at about that time he was there to observe the creek and to give instructions in the setting of the gauge.

Q. Did you go with him down to the creek?

A. No.

Q. You don't know what his actual observations were there?

A. No, sir. Mr. Deacon went in my place.

Q. All right. Now, Mr. Dickey, I believe that on



(Testimony of Ernest R. Dickey.)

one or two occasions you have observed the mill which Mr. Zannaras has set up there at the mouth of Bonanza and Burro Creeks?      A. Yes, sir.

Q. How recently did you look at it?

A. Last Sunday.

Q. Did you form any opinion, Mr. Dickey, as to whether or not it was economically feasible to operate that mill?      A. I would say no.

Q. Why?

A. It would be necessary from a good milling practice to make further installations of the equipment necessary to make that mill operate efficiently on a steady basis.

Q. What do you mean; what is wrong? [201]

A. One of the main things that I observed is that it is necessary that they have a classifier run in close circuit with the ball mill.

Q. Why is that necessary, Mr. Dickey?

A. The ore is fed to a ball mill at various sizes, as Mr. Zannaras stated yesterday, up to probably four inches. As that ore is fed into the mill, a portion of it is ground to the desired fineness, and other ores are not ground to a desired fineness. Therefore, as it is discharged from the mill it should be returned to the mill by some means. A classifier performs that duty.

Q. In other words, under the present set-up it would either be thrown away or would be manually returned, is that right?

A. Yes, sir. Further, when you do not have a classifier of some design to do that part of the job,



(Testimony of Ernest R. Dickey.)

it is very hard to have complete control over the operation, and in milling practice it is very necessary that we have a constant feed into the mill and constant regulation of the flow through the various processes in the mill so that you can set whatever is necessary. Like in his particular mill, to make a proper concentration on a table, you must maintain constant feed on [202] that table. It cannot vary and still make a good grade of concentrates.

Q. What, if anything else, did you think should be done to the mill?

A. Well, I believe if it was my mill there would be several things, but I hate to say what should be done at somebody else's mill.

Q. Did you observe the amount of tailings that were at the mill there?

A. I have at various times.

Q. What relation did the tailings bear to the amount of ore that has gone through that mill?

A. Normally, if tailings are stored in a pond prepared for that purpose, you could estimate very closely the amount of tonnage that has been put through a mill. If tailings have been allowed to run down the creek, you have not much of a chance to estimate it.

Q. What is the situation there?

A. There was no pond constructed for the purpose of storing the tailings.

Q. Where did the tailings run?

A. From the mill into the Bonanza Wash, which

(Testimony of Ernest R. Dickey.)

I would just estimate two or three hundred yards above Burro Creek.

Q. In other words, they would run into [203] Bonanza Wash, which, in turn, feeds into Burro Creek? A. Yes, sir.

Q. Were you able to estimate the amount of tonnage of tailings there?

A. Well, that is pretty hard to say. At no time I would say that I ever saw tailings that would amount to over half a ton or a ton at the very most.

Q. Now, Mr. Dickey, you, I believe, have also been at the mine? A. Yes, sir.

Q. Both the shaft and open cut?

A. Yes, sir.

Q. Did you, from your experience in mining, Mr. Dickey, would you be able to even guess at the amount of commercial ore, mineable ore, at the open cut? A. No, sir.

Q. Why not?

A. There is quite a problem there. In the first place, if I was to be required to make an estimate of the tonnage in a situation of this kind, it would be very necessary that some exploration work be done. It would be impossible to walk over the surface of a property and estimate how [204] much tonnage is there, because there is no development or exploration work that would give you that information.

Q. Do you know of any instance in all your experience in mining, Mr. Dickey, where practical mining operators have gone to the expense of setting

(Testimony of Ernest R. Dickey.)

up a mill before exploration work to block out and determine the amount of ore body available?

A. Well, stating from practical mining——

Q. I say, people that know that business.

A. No. They fully determine their ore reserves before building a plant.

Q. Did you also examine the shaft which has been sunk in 28, I believe it is? A. Yes, sir.

Q. From your examination of that shaft and the surrounding area would you be able to form any estimate as to the amount of commercial ore available there? A. No, sir.

Q. Going a minute to this matter of the use of water in mining, Mr. Dickey, with respect to the running of water through an engine, what would be the result of running water through an engine, rather than circulating it if the thing were continued for quite a considerable period of time? [205]

A. Well, most of my mining experience has been in Arizona where water has been a problem, and no good practice would be to run water directly through an engine and let it run to waste, for two reasons; one, being conservation of water, the other, that most of the water in this State carries some solids, lime formation which is readily deposited in the water jacket of an engine. Therefore, when you run water from some source through an engine and let it run to waste, there is a good deal more chance for sediments and solids to be deposited within the water jacket and in due time will clog the water circulating system completely.

(Testimony of Ernest R. Dickey.)

Q. With respect to the use of the water in connection with the operation of a jackhammer, can you tell us what the normal use of water would be in an eight hour shift or twenty-four hour operation, whichever is easier?

A. The operation of water——

Mr. Cox: Just a moment. Is there any difference in the amount of water used in using a jackhammer according to the terrain, or the type of material that is being worked on by the jackhammer?

A. Yes, sir. [206]

Mr. Wilmer: Put it under the worst conditions.

A. Yes, sir.

Q. Give us the highest amount that would be used normally, Mr. Dickey, and under the worst conditions of the terrain.

Mr. Cox: Just a moment, I think if you are going to make a calculation——

Mr. Wilmer: Let's make it the worst and let it go at that.

The Court: Let's say the hardest rock in the country.

Mr. Wilmer: The hardest rock in the country that you know of.

A. The hardest rock don't take the most water. Hardest rock actually takes less water. It depends on your formation of your drilling, but to answer your question now, from worst conditions, or a man running a jackhammer would not use over 50 gallons of water to drill a round, but that would be in a shaft which we have in question now.



(Testimony of Ernest R. Dickey.)

Mr. Wilmer: How long would it normally take to do that?

A. Oh, four to six hours if they had good air pressure and a good machine.

Q. In respect to wetting down the ore under [207] the conditions that you observed at the Zannaras Mine, that type of ore and that type of mining operation, how much water would be required normally under normal conditions?

A. In actual mining practice, the amount of water that is used in drilling will be sufficient moisture to dampen the dust after the blasting has been made. You do not have to add more water unless you wait over a long period of time and let it dry out.

Q. Would you believe it would be practical in any one day to use as much as a thousand gallons of water in that shaft?

A. No, sir.

Q. If over continuous operations a thousand gallons would be dumped in there every day, what would be the results, or do you know?

A. It depends on the formation of the country. If it was ore that was porous, fractured or faulty, the water would seep away. If the formation was right, it would eventually fill the hole up.

Mr. Wilmer: I think that is all.



(Testimony of Ernest R. Dickey.)

Cross-Examination

By Mr. Cox:

Q. Mr. Dickey, I believe you stated yesterday [208] that you were qualified as a mining engineer and that you acted as a mining engineer at several mining companies in Arizona?

A. I don't remember exactly stating I qualified for a mining engineer.

Q. Well, was it consulting engineer?

A. Well, I did work in a consulting capacity, yes, sir.

Q. Did you work as an engineer for those companies?

A. In a consulting capacity, various occasions and for making examinations of properties.

Q. And you term yourself an engineer, as a consulting engineer?      A. No, sir.

Q. You weren't employed by them as a consulting engineer?      A. No, sir.

Q. Didn't you state yesterday that you were employed by the mining companies as a consulting engineer?      A. No, sir.

Q. Sir?

A. I said I worked at the UVX as a consulting engineer. I didn't say I was employed as a consulting engineer. [209]

Q. Well, weren't you employed by the UVX?

A. I certainly was, but not as a consulting engineer.

Q. What did they employ you as, Mr. Dickey?

(Testimony of Ernest R. Dickey.)

A. As superintendent of repairing of ore claims. That was my actual employment when I was employed by that company.

Q. And while you were there you worked, though, as a consulting engineer?

A. They took me out of that job and asked me to go and make examinations of various properties, which I did. In other words, that type of work would not be mechanical work, it would be consulting work, and—well, it would be in some cases consulting work and doing examinations.

Q. I believe you said that you had never registered as an engineer in this State?

A. Correct; State of Arizona.

Q. Did you ever apply to register?

A. No, sir.

Q. You have never been employed then by anyone in this State at any time as an engineer of any character?

A. Correct.

Q. Now, what former training have you had that would qualify you as an expert of engineering [210] problems of any kind, Mr. Dickey?

A. Well, do you want me to start from the beginning, or how do you want it?

Q. After grammar school, we will leave that out.

A. Okay. After grammar school and high school, we will leave that out, too?

Q. All right.

A. I started work at the United Verde Copper Company, as I told you. I took six years of night school training in mining engineering work.

(Testimony of Ernest R. Dickey.)

Q. Where? A. In Jerome.

Q. And under whom?

A. I can't recall the professor's name. He conducted regular classes at that time in the Hampton House.

Q. And the classes were there in Jerome?

A. Yes, sir; and I might further——

Q. What courses did you take there?

A. Sir?

Q. What courses did you take in those classes?

A. Took in the beginning, I took mechanical drafting, took mining, mapping and surveying and geology and mine management. Then aside from that I put in, oh, I think I'd have to make a [211] guess, but I put in weeks of time working in the engineering department of the United Verde Copper Company during the time that Mr. Talley was General Manager. That time was put in without any remuneration. I did it on my own accord, working with the different engineers for the purpose of gaining knowledge, and at the same time I worked at various departments in the mine, underground and surface.

Q. Now, wait; we were talking about formal education. We had this night school. What else, formal education?

A. I don't know exactly what you mean.

Q. What schooling did you have?

A. I didn't go to college, if that is what you want to know.

(Testimony of Ernest R. Dickey.)

Q. You have taken those courses. Have you taken any other course?

A. I just named the various courses that I took. I missed one. I did take Spanish along with that, and I have studied continuously since then.

Q. You are able to calculate the flow of water and the amount of water flowing past any point if you had the dimensions on the flow, are you not, Mr. Dickey? [212]

A. Well, it could be done. I can do the same as most engineers that I know do. We can go and measure the water and look it up in our textbooks and tell you exactly what it is.

Q. In other words, from a table you can calculate the flow? A. Exactly.

Q. Now, Mr. Dickey, referring to Defendant's pictures, being the Exhibits B, C, D and E, I believe you stated that Exhibits B and E showed the same pools down—the pools shown in the background of B, being the pools shown in the background of E, is that correct? And this is the same stick?

A. That is right, looking downstream when taken from different positions.

Q. Then looking at the foreground of B, can you see the bed of the stream there?

A. Not the particular channel, because of the growth and the boulders. This little channel stream that normally runs through the creek is running at its very lowest elevation, it is coming right around through here right this side of where Mr. Green is standing.

(Testimony of Ernest R. Dickey.)

Q. In other words, Mr. Green is standing right above the flow that is there? [213]

A. Yes; he is standing right beside it, you can see. In other words, he is down in that ravine there about to his knees.

Q. And then the same——

A. This is a close-up of that same little ravine down here.

Q. All right. This D then shows a close-up in the left upper corner of the ravine——

A. Channel.

Q. The channel?           A. Yes.

Q. What is the size of that pipe, Mr. Dickey?

A. That is what they call a two-inch standard pipe.

Q. Two-inch standard pipe?           A. Yes, sir.

Q. And what is the width of that ravine here going out of the Zannaras sump?

A. Well, now, it depends on how you want to ask the question, what is the depth, width, or what is the closest width?

Q. The closest width at this narrow point where we see this rock?

A. It is a little in the water. This is above the water.

Q. Yes; the one that goes down into the [214] water, slides down into the water across there at the nearest point.

A. Let's make it a foot in width.

Q. A foot in width?           A. Correct.

Q. How deep is the water at that point?



(Testimony of Ernest R. Dickey.)

A. Right at this particular point I don't recollect for sure, but I don't believe it could be over four inches deep.

Q. Four inches deep? A. Yes.

Q. This grass, that is Bermuda Grass growing there?

A. Well, it wouldn't be Bermuda Grass, I know, but I wouldn't know what you would call it.

Q. It is a type of grass?

A. That is right; it is vegetation.

Q. Well, is it very heavy, is it like sticks, or is it like grass that is flexible?

A. No; it was somewhat flexible. It is not what you might say real stiff.

Q. Then from the grass, the growing grass in the channel, that is not bent in any way by the flow that you can see in the picture, is it?

A. No; I wouldn't think so, no, sir.

Q. Then what would you say would be the [215] velocity of the flow across this gap here, one foot wide and four inches deep?

A. Right here I wouldn't say that there is any normal, you might say, flow particularly, because right at this point, this pool gets larger and the water looks to be standing still. In other words, it is just like running a stream of water into a big tub, or something like that, and you cut a hole on the other side, you wouldn't normally notice a current crossing in the tub.

Q. I don't mean the top portion. I mean the whole, the narrow point.

(Testimony of Ernest R. Dickey.)

A. That is what this is; that still seems level. The water is not coming in with any velocity.

Q. You say there is no particular velocity, then, at this point?

A. No particular velocity at this point, but just above that point there was, where water was tumbling down the rocks.

Q. You mean below this point?

A. No; up, you are looking upstream, now.

Q. Now this is the entrance of the water to the Zannaras point of diversion?

A. Sump, we call it; yes, sir.

Q. And this is the creek bed as you have [216] said on each side, and it shows dry, does it not?

A. Correct.

Q. And the only water then that shows at the point—would you mind marking the point here with a——

A. I have a pen.

Q. You have a pen. Just put an arrow like you would as an engineer to show that width.

A. In other words, that is the only stream of water——

Q. That goes into the Zannaras sump?

A. That is right (complying).

Q. Now, at the point that you have marked with arrows, being the only stream of water going into the Zannaras sump, there is no appreciable flow, I mean, you can't see a flowing in there?

A. That is right; right at that particular point where I put the arrow.

Q. At that point, and the same is true, on seeing

(Testimony of Ernest R. Dickey.)

no flowing, so you could not measure that flow through this sump?

A. I couldn't make any measurement as to the velocity.

Q. And will you now then take a piece of paper and show the Court how you calculated that there was a hundred gallons a minute of water [217] going into the sump by showing on what figures it could be based, leaving out the velocity.

A. Okay. Now, if you will recollect, I didn't say there was a hundred gallons a minute going into the sump. I said there was a hundred gallons a minute leaving the lower pool, of the big pool. If you will look at it you will see.

Q. Now, by the "big pool," you mean the pool shown on Exhibit——

A. The downstream side, correct. Now, the reason why that can be, as I've said before——

Q. Now, wait just a minute; let me—Mr. Wilmer will bring out anything you want to be heard.

A. All right.

Q. Where did you base your calculations from seeing it that day, Mr. Dickey?

A. All right. Now, let me explain this: When this picture was taken I was standing very closely on the other side of the suction or the diversion point of Mr. Zannaras.

Q. I don't want to get you confused. All right, just a moment.

A. See, this is the south side of the picture and

(Testimony of Ernest R. Dickey.)

I was standing over here looking back down that way. [218]

Q. All right.

A. Okay. Now, this water level here is somewhat lower than the water in the point where the pick-up pump is, because of obstructions, boulders, gravel, and so forth. The level in that pond is a little bit higher than the level in this pond. The creek there goes downstream pretty rapid, evidently. The elevations are a good deal different, but it is open here for a distance of approximately 100 feet or more across, or very near level, or the water would not have been standing there as it was, but over on this far corner, at the downstream side, out of that pond you can't see in the picture here now——

Q. Just a moment, let's get this. You are speaking of Defendant's E? A. Correct.

Q. Now, you are saying that the farthest point—— A. At the outlet of that point.

Q. At the outlet of that point?

A. Correct; the outlet at the point when I observed it, I estimated to be 100 gallons a minute.

Q. Do you have any pictures of that water flowing at that outlet? [219] A. No, sir.

Q. Do you have any pictures of the water flowing, showing any velocity at any point in Burro Creek at the time you took those pictures?

A. I don't have any pictures with me. I do have pictures up at our place, but I didn't bring them with me. I might state this, that at that outlet, for further evidence, there is quite a reef of large



(Testimony of Ernest R. Dickey.)

boulders and small boulders back in around it. The gravel is pretty badly hard and cemented there and the water is running down creek pretty rapidly out of that pool.

Q. That is clear on down the pool?

A. About a hundred yards—not over a hundred—50 feet, 50 yards, probably. We are standing right close to the suction now, and I don't believe it would be over a couple of hundred feet down there.

Q. Looking back now at the exhibit that we have marked with the arrows, that is what you engineers would term the same as a weir, is that right?

A. Yes; I would say so.

Q. Now, I——

A. It depends on the velocity. If the water is standing still there wouldn't be any flow. [220]

Q. And if there was a flow, how fast would the flow have to be, Mr. Dickey, to——

A. Okay. I can see what you are driving at, and I think I can answer. At this particular point I would estimate, probably, maybe 15 or 20 gallons of water coming out of the rocks and gravels right there at the surface coming into this little pond, but as I explained before, this basin or gravels was a good deal higher right directly above the suction, and on up the creek a little ways there wasn't any water, and then the water was seeping and coming through the gravels. This pond is higher than the other picture I showed you where the other pond is, therefore, I would say that the water that made the difference in the flow from what you can see on the



(Testimony of Ernest R. Dickey.)

surface here at the higher elevation and the outlet in the lower point at the lower elevation was made up by water coming through the gravels and boulders.

Q. Can you calculate, and I show you Peele's Mining Engineer's Handbook, which is a standard handbook, is it not?      A. Yes.

Q. And referring you to the table "Discharge in Cubic Feet Per Second Per Foot of Length [221] of Thin-Edge Weirs," and ask you if you can calculate what velocity flow would have to be at that point one foot and four inches deep in order to have a hundred gallons a minute?

A. I didn't say there was a hundred gallons a minute going into that.

Q. Can you calculate—will you calculate it for me?

A. Because there is no flow of water, I told you that.

Q. What would have to be calculated if you had the actual measurements instead of just guessing, by looking, what would have to be calculated in order to get that flow, can you show that?

A. Okay; just let me look at this and see what you mean here (looking at book). It will take close to—three inches——

Q. Can you figure it for me?

A. There is charts already figured out. We don't have to figure it.

Q. All right; then it is all figured out in the handbook?

(Testimony of Ernest R. Dickey.)

A. That is right, 7.48 gallons a cubic foot.

Q. 7.48 gallons? A. Per average. [222]

Q. It will take close to what, now?

A. Three-inch depth in a weir a foot wide.

Q. And you calculated that flow in your mind to get from how many—you worked out how many cubic feet of that, Mr. Dickey, you ran it back from cubic feet, did you not?

A. I don't quite follow you.

Q. You ran it back to get it to gallons from cubic feet. Where do you find it on your table?

A. You have your equation to work from here. As I told you before, you have the area of whatever the necessary width may be, and you measure your depth there, and those are already worked out in charts. You don't have to do any mathematics or use a slide rule or anything of the kind. They are already worked out. That is done for fellows just like myself.

Q. You did not get that from this table?

A. I didn't actually get it from here right now, because a foot wide and an inch deep is approximately 33 gallons. I know that a gallon of water, I mean, a cubic foot of water is 7.48 gallons.

Q. That is right.

A. And it weighs approximately 62½ pounds.

Q. That is right. [223]

A. And that is not on here either. I expect a fellow could find out if he wanted to look it up.

Q. From the table, is that the type of table you figured from to calculate that sum, Mr. Dickey?

(Testimony of Ernest R. Dickey.)

A. Yes, sir, but this is what they used.

Q. That is the table you used?

A. There is various tables, there is dozens of tables.

Q. Will you then calculate for the Court the flow of water through a weir one foot wide and four inches deep and just calculate it here from the table? You have the table, so you can show from the table where you arrived at your figures.

A. It would be approximately 132 gallons a minute.

Q. Now, will you explain how you arrived at that?

Mr. Wilmer: May it please the Court, if the man is figuring it, it does not make any difference whether he takes it from the table or where he takes it, wasting an hour at a time.

The Court: Put your man on and let him figure it. You have your dimensions if he is wrong.

Mr. Cox: Well, I just want to show that he could not compute it. He said he would have [224] to have a table.

The Court: Well, he did.

Mr. Cox: Not from the table.

The Court: Well, your witness can compute it from the table to see which is right and which is wrong.

Q. (By Mr. Cox): Mr. Dickey, you computed that by multiplying four by 33? A. Yes.

Q. You didn't obtain that 33 from the table?

A. I didn't even refer to it.

(Testimony of Ernest R. Dickey.)

Q. All right, that is what I thought.

A. I had already had that figured in my mind. Why should I go through a lot of mathematics to find it out? It is just some table on the diameter of a pipe, increased four times. I already have that.

Q. Mr. Dickey, in these pools you say there wasn't less than 60,000 gallons nor more than 100,000 gallons, was there?      A. Estimate it.

Q. That was all down below Mr. Zannaras' place?      A. Correct.

Q. And there was no flow of water could be seen into Mr. Zannaras' sump? [225]

A. As I told you awhile ago, a few gallons a minute seeping out of the gravels there.

The Court: This water had to flow past the sump to get there?

A. That is right, through the gravels, but not a surface flow.

The Court: Yes.

Mr. Cox: And you estimate there were a few gallons a minute seeping through the sand into the sump?      A. Flowing into that sump; yes, sir.

Q. Now, how deep did Bagdad dig in to construct the sump for their diversion at Burro Creek?

A. That was installed before I came to Bagdad, so I don't know what they did in the beginning. The only thing I can go on is from observations after I took over the operation. It is a natural hole and there is times when flood waters come in and fills this hole very near full with gravels. We have to go out with equipment and muck that out of there.

(Testimony of Ernest R. Dickey.)

The Court: We will have our morning recess at this time.

(Thereupon, a short recess was taken after which all parties, as heretofore noted by the Clerk's record, being present, the trial resumed as [226] follows.)

ERNEST R. DICKEY

resumed the witness stand and testified further as follows:

Cross-Examination

(Resumed)

By Mr. Cox:

Q. At the crossing when you saw the water there, Mr. Dickey, you say that it was about how deep, or that water where it was around four feet wide?

A. It varied from four inches, and it varied in width, too. It depends on the distance you want.

Q. Well, at the particular place, was there any particular place you have in mind that you remember?

A. Yes, sir. At the downstream side of the road it crosses the creek.

Q. And how wide was it there?

A. Well, the estimate I made there for calculating purposes would be about four feet in width the water was flowing.

Q. And how deep?

A. Oh, approximately four inches.



(Testimony of Ernest R. Dickey.)

Q. And how many gallons per minute did you calculate the water was going past that point?

A. Well, it depends on a lot of [227] obstructions that could be in there, but I would say there was more than a hundred gallons a minute passing that point. It depends on the speed and velocity, and so forth. If the water was going very slowly you would not estimate very much water. If it was running pretty fast, you would say there was a lot more water.

Q. And you estimate, though, a hundred gallons a minute, or a little better than a hundred gallons a minute there, is that correct?

A. Yes; more than a hundred gallons.

Q. You say you got that for calculating purposes. Did you calculate how much water was going past there?

A. Not exactly, because I wasn't interested.

Q. I am asking you, and you answer. Just answer me, Mr. Dickey. Did you calculate it?

A. I will say no.

Q. Well, you didn't, then?

A. That is what I told you.

Q. Yes, and when was it you saw that, you say in October, was it?

A. No, sir; July 16th.

Q. July 16th, and have you at any time, Mr. Dickey, made any calculations on the flow of water at any point above Mr. Zannaras' place, below [228] your point of diversion, have you made any?

A. No, sir.

(Testimony of Ernest R. Dickey.)

Q. And how far is it from Mr. Zannaras' place to your point of diversion?

A. Well, I never measured it or anything of that kind. I would say about 12 miles.

Q. About how far? A. About 12 miles.

Q. Showing you Plaintiffs' Exhibit 2 in evidence, what is the purpose of the ladders, the ladder work there above the pump?

A. Okay. This ladder work is a framework and on top of this frame is rails installed on that. The pump is mounted on a truck that has cart wheels on it, and in cases when there is floods coming down the creek, this pump is pulled up that framework or ladder, as you explained it, by means of a hand winch at the top connected with a cable to the pump.

Q. How high can that be pulled?

A. Could be pulled clear to the top, if necessary.

Q. How high have you seen it pulled while you have been there? A. Oh, about 12 to 15 feet.

Q. Does water come up that high? [229]

A. Well, I never seen the water that high. I saw the water about five to six feet high coming through that canyon there.

Q. The way the water flows through that canyon it tends naturally to leave a pool where your point of diversion is, doesn't it? A. Correct, sir.

Q. And the current tends to, when there is a flood, to clean that out again, doesn't it?

A. No, sir; not necessarily. Sometimes it has a tendency to clean it out and other times it will fill it up and we have to clean it out with equipment.

(Testimony of Ernest R. Dickey.)

This past summer we had to take a drag line down there and clean it out.

Q. When; this past summer?

A. During the summer months. The fact of the matter, it is still down there in that area working now.

Q. I say, about when, after June, you mean that by "summer"?

A. Yes; it would be after June.

Q. There has been no floods since June, has there?

A. Yes, sir.

Q. Up until when was there a flood?

A. There was a big flood come down there [230] on the night of August 4th, and the morning of August 5th. That is the time that I stated that I saw water five or six feet high.

Q. Of this summer?

A. Yes, sir.

Q. The pictures showing this Zannaras sump, one of them being Exhibit C, the picture was taken from downstream, was it?

A. Looking up, yes, sir.

Q. And the black across here is white sand, is it not?

A. No, sir.

Q. There is little pieces of water?

A. In this particular picture, if I recollect the way the light reflected, the lighter portion is water, the darker portions in here is vegetation grown up right through the water. This is all water in between the rocks here, not sand. Here is sand out here. That is white.

Q. The white is rock, is it not?

(Testimony of Ernest R. Dickey.)

A. Could be rock, sand, gravel, just the same as you see up here.

Q. Well, on the pump, the electric pump pumping water, you say that you were able to gain knowledge of estimating it by knowing the amount the pump was pumping and seeing it [231] discharge and running?

A. Various times. There is displacement pumps, air pumps.

Q. And on these pumps, they have a certain gallon-per-minute rating, do they not?

A. Manufacturer's rating, yes, sir. They all vary.

Q. And from those ratings you were able to know how much the pump was pumping and be able to tell, seeing the discharge, to estimate what came out of the——

A. Correct.

Q. Well, does a pump pump what its rated at?

A. No, sir.

Q. What is the difference?

A. Inefficiency of the efficiency of the pump and friction and pipelines heating. All of those things figure into it.

Q. Is the electric pump pumped at constant speed?

A. If the power is constant.

Q. Is your pump at Bagdad operating efficiently?

A. As efficiently as you can for that type of pump.

Q. And what percentage of efficiency would you say that the pump was pumping on the [232] manufacturer's rating?

A. 80 per cent.

Q. Was there a Mr. Kinard, some name like

(Testimony of Ernest R. Dickey.)

that, that was there before you? A. Kendall.

Q. Was it Kendall? A. Yes, sir.

Q. Was he in the same position you are now in?

A. Yes, sir.

Q. Have you examined the records of the Water Department concerning your—the Bagdad water rights?

A. I have—no, sir; I have not. Inspected as to our water rights, and so forth, through our attorneys.

Q. But you have not examined the proof of use of water filed by Bagdad?

A. I looked at one of the permits yesterday. I have examined one.

Q. You mean the permit——

A. Granted by the State, yes, sir.

Q. But you didn't look at the proof of use by Bagdad or seeing the amount of water you were using there? A. No, sir.

Q. Do you have at any point on your [233] diversion a gauge showing the amount of water that you are taking out? A. No, sir.

Q. I believe you stated yesterday that you were using around 100,000 gallons per day for domestic purposes? A. Yes, sir.

Q. Now, is that for the Bagdad employees?

A. Anyone that lives there; everyone.

Q. And there are other mining camps, miners from other mining camps also living at Bagdad?

A. Yes, sir.

Q. Hillside miners live at Bagdad?



(Testimony of Ernest R. Dickey.)

A. Yes, sir.

Q. Is there any charge made to the Hillside mine or to the miners for the water? A. No, sir.

Q. Is the Hillside Mine a part of the Bagdad operations? A. No, sir.

Q. The water is used for landscaping and gardening also at Bagdad? A. Yes, sir.

Q. I believe you stated that they had—that you used approximately four to five thousand gallons per day of fresh water in your milling? [234]

A. Yes, sir.

Q. Now, in your domestic water do you include the gardens in your computation of that?

A. Yes.

Q. Are there any other mining claims or mines that there are miners also living at Bagdad and you furnish water to? A. Yes, sir.

Q. Which others?

A. Goodwin's Mining Company No. 2 Mines.

Q. Are those near there? A. Yes, sir.

Q. How far?

A. Oh, airline, this is three or four miles.

Q. By road?

A. By road, probably 10 miles, 12 miles.

Q. And the Hillside Mines, how close?

A. By road, about 10 or 12 miles.

Q. Do you, personally, have any interest in those? A. Yes, sir.

Q. The seepage from the tailings dam, you said that you had measured the flow of that seepage?

(Testimony of Ernest R. Dickey.)

A. I had the engineering department measure it with a weir box. [235]

Q. And they measured that at the point shown on Plaintiffs' Exhibit 5 in evidence?

A. Let's see.

(The exhibit was shown to the witness.)

A. If you will look here closely, that weir box is sitting right in behind these rocks right at the foot of the pump.

Q. What is the concrete construction there and what is the purpose of that, Mr. Dickey?

A. I will have to tell you from hearsay. That was there before I came.

Q. You don't know whether that was put in there to reclaim the water or not?

A. It was out there from back in years ago to reclaim the water that was coming down that creek, yes, sir.

Q. Do you use any water for leaching?

A. Sir?

Q. Do you use any water for leaching?

A. We do not.

Q. Do you have any leaching operation at all?

A. Going on? No, sir.

Q. Did you have any installation for leaching?

A. We did from an experimental standpoint on a small scale.

Q. When did you stop that? [236]

A. Well, I'd just have to make a guess, however, there is a man here that can tell you the exact date.

Q. Did you make a statement at the Small Mine

(Testimony of Ernest R. Dickey.)

Operators meeting in Prescott a few months ago concerning the pumping of carbonates and blue ores in for leaching purposes by the dam?

A. Oxide ore. That is what that dam is made out of there, from our tailings pond.

Q. Is that for leaching purposes?

A. It is primarily to store the tailings, but we did anticipate leaching at that time.

Q. But you are not leaching it at all now?

A. No, sir.

Q. But the purpose, the ore being there is a natural leaching process?

A. That is right; natural drainage for it.

Q. Do you know whether the water in the dam, is it the same as the water from Burro Creek as to acidity and usability; is it base or acid, do you know?

A. We make tests on that, oh, various times every month or two to satisfy our own curiosity. We have seen samples of it,

Q. The question is, do you know whether it is acid or base? [237]

A. It is neutral.

Q. It is neutral water. Do you know what the Ph of that water is?

A. About 7.5.

Q. When you looked at the Zannaras Mine, isn't there a ten-inch mesh screen classifier to keep in ore larger than that from going out of the ball mill?

A. From going in over the jig, there is, yes, sir.

Q. Do you know what ores there are at the Zannaras Mine?

A. I know what it is reported to be.

(Testimony of Ernest R. Dickey.)

Q. Have you ever checked the property, you say you have been over there, have you checked it to see what type of ores there are?

A. I didn't do it in that way, you might say. We did take three samples this last summer to satisfy our curiosity as to what type of ore it was.

Q. How much material do you take to get a fair sample?

A. Well, it depends on the conditions, what the width of the area that we are sampling is and normally it would run about 10 pounds per sample.

Q. You picked up normally about 10 pounds per [238] sample?

A. It depends on the condition. If it is extra wide width, you are going to take more.

Q. Do you have a mineralite?

A. Yes; I do.

Q. Did you use a mineralite on these samples?

A. I did.

Q. Have you ever been to the Zannaras property at night?

A. No, sir.

Q. You state that you always block out your ore before you start your mill?

A. Build a mill?

Q. Yes. Did you do that at Hillside?

A. It was already blocked out. I didn't have to do it.

Q. That mine, it was an old mine?

A. Already developed; yes, sir.

Q. It had not been operating for years?

A. Several years; yes, sir.

(Testimony of Ernest R. Dickey.)

Q. Where does that mill get its water from, Hillside?

A. From the mine, the Hillside Mine?

Q. Yes. A. From the Hillside Mine.

Q. From the Hillside Mine? [239]

A. Correct.

Q. Is there any water taken from Bagdad to Hillside? A. No, sir.

Q. Is there any water taken from Bagdad to the Goodwin property? A. Yes.

Q. How much water is taken over there?

A. I have no idea.

Q. What is it taken over there for?

A. Drilling purposes, mining purposes and cooling engines, and so forth.

Q. In other words, the Bagdad, the water that they are using from Burro Creek is also being used for the Goodwin property in the development there?

A. Correct.

Q. How was it taken there?

A. In a tank truck.

Q. What is the size of the truck?

A. Oh, I don't know. It is about, maybe two and a half ton truck.

Q. Did you take a shovel or anything of the kind to check at the Zannaras diversion as to how far down bedrock was?

A. Oh, my goodness, I sure did not, because, my gosh, that has big boulders that would run [240] into work which would probably take a couple of men a week to do.



(Testimony of Ernest R. Dickey.)

Q. Isn't there a natural rock formation across the creek just above the Zannaras property that brings the water to the surface there?

A. You mean, that is swept clean on solid bed-rock?

Q. No.

A. There is rock on both sides, solid rock on both sides of the canyon.

Q. Solid rock on both sides of the canyon?

A. Yes.

Q. And it comes right on down and there is just sand and gravel on the top?

A. In the bottom, yes. How deep that is, I don't know.

Q. You don't know how deep that is?

A. No, sir.

Q. What type of pump is it that you have there at your point of diversion?

A. 25 horsepower Ingersoll Rand Centrifugal Pump.

Q. And the manufacturer's rating is how many gallons per minute?

A. Oh, if I recollect, about 700 gallons a [241] minute.

Q. 750, isn't it?            A. I won't say.

Q. How many horsepower is that pump?

A. 25 horsepower.

Q. What tonnage are you milling there?

A. Average about 3,000 tons a day.

Q. And do you know how much water you are using per ton for milling?

(Testimony of Ernest R. Dickey.)

A. Oh, I could make a guess, but I have the mill superintendent here to answer that question.

Q. Is the former superintendent still at Bagdad?

A. No, sir.

Q. He is not available, is he?

A. I don't have any idea where he is at.

Q. How much head, what is the height that the pump raises the water?

A. The diversion pump?

Q. Yes. A. About 91 feet.

Q. Isn't that the pump at the lake?

A. That is right.

Q. What about the one at Burro Creek?

A. The pump at Burro Creek, that is the one we are talking about. You mean the sump pump?

Q. Your main pump, where is your main [242] pump? A. Now, let's clarify this a little bit.

Q. I say when you say 91 feet, isn't that the pump up at your lake where you repump your water, recirculate it?

A. You mean from the tailing pond?

Q. Tailing pond.

A. Well, I think we got about two pumps on there. I think there is one that has got about a 60 horsepower motor and I think the other is about 75.

Q. Well, is there a pump—there is a pump at the sump. Now, that pump—then there is a pump at the tank above, isn't there? A. Yes.

Q. You have two pumps up at the tailings pond, as you call it? A. Yes, sir.

(Testimony of Ernest R. Dickey.)

Q. And those are both recirculating pumps, I mean they bring water back up?

A. Yes; they take the water from the mill pond and put it back up in the storage tank for use in the mill.

Q. Now, the pump that is on Burro Creek, that, you say, is a 25 horsepower pump?

A. Correct.

Q. And it, you say, has a head of 91 feet? [243]

A. Approximately.

Q. And the pump at the tank above is what size?

A. About 125 horsepower, four-inch discharge.

Q. And you say that has a four-inch discharge?

A. Yes, sir.

Q. Then you are taking out, anyhow, considerable water there, you would be running at least the amount of your water right there at Bagdad, would you?

A. No; I don't think we are using that much.

Q. How much less would you say you are using?

A. Oh, a third less.

Q. A third less?                      A. Yes; on the average.

Q. Would you say you are using about 200,000,000 gallons?

A. Probably a little over, maybe 250,000,000 gallons a year average fresh water.

Q. And that would be your fair yearly average?

A. I would think so.

Q. And there is 50,000,000 gallons then that you say, of your water right, that you are now using?

(Testimony of Ernest R. Dickey.)

Mr. Wilmer: Just a moment; there is no evidence as to what the water right is. [244]

The Court: No; it does not mean anything to the Court.

A. May I, at this time——

The Court: No.

A. Okay.

Mr. Cox: That is all.

(The witness was excused.)

### CLYDE C. COFER

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. Will you state your name?

A. Clyde C. Cofer.

Q. Where do you live, Mr. Cofer?

A. In the Kingman District, Kingman.

Q. What is your business?

A. Ranching to stock raising.

Q. How long have you been in the Kingman District, Mr. Cofer?

A. Well, I have been in Mohave County all my life, Mohave and Yavapai.

Q. Were you residing there?

A. Yes, sir. [245]

Q. I believe, Mr. Cofer, that you at one time owned what is known as Burro Creek Cattle Ranch?

(Testimony of Clyde C. Cofer.)

A. Yes, sir.

Q. How long have you been familiar with the Burro Creek District and the Burro Creek Cattle Ranch?

A. 50 years.

Q. I take it, then, that you have spent a considerable portion of your summer in the area, is that right?

A. Well, not every summer.

Q. I mean, are you generally familiar with the area for the past 50 years?

A. Yes, sir.

Q. How extensive was the Burro Creek Cattle Ranch; how much was the holding, the spread?

A. Right at two townships.

Q. When did you buy that, Mr. Cofer?

A. May, '40.

Q. Were you familiar with the use which the Burro Creek Cattle Company had made of the water in Burro Creek, were you familiar with the use which the Burro Creek Cattle Company had made of the waters of Burro Creek?

A. Yes, sir. [246]

Q. You are familiar, I presume, then, Mr. Cofer, with the Bagdad property and the stretch of the creek bed below that down to the Kingman Crossing?

A. Yes, sir.

Q. Do you have any ranch headquarters in that area?

A. That is the Burro Creek Ranch headquarters.

Q. Where is that with respect to the Kingman Crossing?

A. Four miles by—

Q. Four miles by the creek?

A. By the creek.



(Testimony of Clyde C. Cofer.)

Q. What do you have at those headquarters, Mr. Cofer? What improvements were there there?

A. Well, about 40 acres of land, irrigated land, house, corrals, fences, pasture.

Q. To your knowledge, Mr. Cofer, has the Burro Creek Cattle Company used the waters of Burro Creek prior to 1919?

A. Yes, sir.

Q. The use of water and irrigation?

A. Yes, sir.

Q. Now, during the summer, Mr. Cofer, will you state whether or not all of the waters of Burro Creek which came below the Bagdad Mine [247] and to the area of the ranch headquarters were used by the Burro Creek Cattle Company and by you after you owned it?

A. Yes, sir.

Q. Was there any surface flow of water which went past your ranch headquarters during the time you owned the property through the months of June, July, or August, unless there was a flood?

A. No.

Q. You were then using the waters to irrigate as much land as you could, is that right?

A. Well, for three years I was there, irrigation water was completely dried up.

Q. Every summer?

A. Yes, sir.

Mr. Wilmer: Mark this.

(Thereupon, the document was marked as Defendant's Exhibit H for identification.)

Q. (By Mr. Wilmer): Mr. Cofer, I believe in '42 you sold the Burro Creek Cattle Ranch and all

(Testimony of Clyde C. Cofer.)

water rights appertaining to it to the Bagdad Copper Company, is that right?      A. I did.

Q. I show you an instrument marked Defendant's H for identification. Will you examine that, please, and state if that is your signature and [248] the signature of your wife?      A. Correct.

Mr. Wilmer: We offer it in evidence.

Mr. Cox: If the Court please——

The Court: I don't want to look at it now. If you will state your objection for the record, I will admit it subject to your objection and you can argue about that later.

Mr. Cox: We object; it is immaterial in that the instrument shows on its face that it carries with it only springs which are not subject to appropriation and that only in connection with a ranch operation, and that the—no place is there anything that would give any rights under this instrument to the Bagdad Corporation for mining purposes.

The Court: All right, it may be admitted subject to your objection.

Q. (By Mr. Wilmer): Mr. Cofer, I believe that the reason why those 40 acres of irrigated land is no longer irrigated and dry is because of the sale of the water right to the Bagdad Copper Corporation, is that right?      A. Yes.

Mr. Cox: I am sorry, I didn't hear the [249] question.

(The question was read by the reporter.)

Q. (By Mr. Wilmer): Mr. Cofer, carrying your

(Testimony of Clyde C. Cofer.)

recollection back over the 50 years that you have been familiar with this country, I take it it has been in connection with stock raising and ranching activities?      A. Yes, sir.

Q. Do you know approximately the number of head of cattle that have been run on that spread and watering from Burro Creek from time to time by you and your predecessors?

A. For about three years John Neel had about 35 head of cattle there.

Q. Do you remember when that was with respect to World War I?

A. During World War I and afterwards.

Q. In other words, prior to 1919 and afterwards?

A. Yes, sir.

Q. And subsequent to that time, was there any cattle from time to time grazed on that land?

A. That is the old original Cornwall Range that goes back into the late Seventies.

Mr. Wilmer: Cross-examine. [250]

#### Cross-Examination

By Mr. Cox:

Q. The waters that you used from Burro Creek, Mr. Cofer, were used for your cattle and agricultural purposes, were they not?      A. Yes, sir.

Mr. Lockwood: May it please the Court, we move to strike the testimony of this witness on his last answer. I'd like to be heard for a few moments.

The Court: I will listen to your arguments when

(Testimony of Clyde C. Cofer.)

the case is concluded, but I can't take up the time today to hear argument. You see, there is no jury here to be confused, so I just simply cannot take the time because I have to get through with this case.

Mr. Lockwood: Very well, we will reserve the argument then until the close of the case.

The Court: All right.

Mr. Lockwood: That is all.

Mr. Cox: That is all.

Mr. Wilmer: That is all, Mr. Cofer.

(The witness was excused.) [251]

### ROLAND F. KASER

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. Roland F. Kaser.

Q. What is your business, Mr. Kaser?

A. I am an engineer employed by the Bureau of Reclamation at Boulder City, Nevada.

Q. And, briefly, Mr. Kaser, what work have you done—first, what is your educational experience?

A. I have had five years of college work, one year in agriculture, four years in engineering, leading to a degree in civil and irrigational engineering.

(Testimony of Roland F. Kaser.)

Mr. Cox: We will admit Mr. Kaser's qualifications.

Mr. Wilmer: All right. Following your graduation from college, Mr. Kaser, did you have any practical experience?

A. Yes; I worked—I assume you are referring to what might apply to this case?

Q. With respect to this case, yes. [252]

A. I was a hydrographer for the Geological Survey, Department of the Interior, for two and a half years, working in the States of Colorado, Wyoming and Nebraska.

Q. What was your work in that connection?

A. Stream gauging.

Q. Was it actual work in the field?

A. Yes, sir.

Q. How was that gauging done, Mr. Kaser?

A. It was done almost entirely by current measuring observations, measuring the cross section by tape and securing velocity observations with a current meter, and computing the discharge and working up records and publication in the water supply papers, also there were some measurements on flood flows to slope area, computations from high water marks after the flood had passed.

Q. Presently, you are with the Bureau of Reclamation at Boulder City doing what?

A. My position is chief of the division of Operational Control where I set up a schedule for release from Hoover and Parker Dams and dispatch the



(Testimony of Roland F. Kaser.)

water between Hoover Dam and international boundaries.

Q. Is it necessary in connection with that work that you have reasonably accurate information [253] as to stream flows, a stream feeding into any tributaries that feed into Parker or the Colorado River?

A. Yes; particularly those that feed into Havasu Lake. That is a reservoir formed by Parker Dam.

Q. In connection with that work, Mr. Kaser, have you had occasion to inspect or look over Burro Creek and its tributaries?

A. Yes; I have made numerous trips to that area in connection with the installing of a flood warning system at the Bill Williams Station and one of the stations is on Burro Creek.

Q. Where is that station on Burro Creek?

A. It is right at the intake of the Copper Company's pipeline.

Q. Right at the intake of the Bagdad Copper Company and that is right above, I believe, the confluence with Boulder Creek and Burro Creek, is that right?      A. That is correct.

Q. In August, '48, did you have occasion to go to Burro Creek?

A. Yes; I made a special trip from Boulder City to Bagdad and Burro Creek areas to observe high water marks from a flood that had come [254] down and had been reported to me by radio, coming on the afternoon of the 4th and 5th, and continuing on. I wanted to also look the site over for a location of a staff gate.

(Testimony of Roland F. Kaser.)

Q. Previous to the time you went there on August 8th, did you receive reports as to the flood on Burro Creek from anyone?

A. Yes; I have a flood warning system using radio communication and received reports each morning from—well, Burro Creek is one of the stations.

Q. Who would make those reports to you before you made this trip on August 8th?

A. Mr. Deacon, of the Bagdad Corporation.

Q. In the event of a flood is the only time you receive a report as to the flow of the river?

A. Well, we receive reports from time to time, but since our main interest was in flood flows, we don't receive a definite reading whether or not it was normal flow or not, but any time there is a flood which goes above normal, we have whatever observations they can make.

Q. Right now, on August—what date did you say you went to Bagdad?

A. I was there at Bagdad the night of between August 9th and 10th, and visited Burro Creek [255] on the morning of August 10th.

Q. When you went to Burro Creek did you see any signs, Mr. Kaser, of a recent flood?

A. Yes, sir.

Q. What signs did you see?

A. Drift lodged on the banks at high elevations which supported the previous report that the river had been up between six and seven feet.

Q. Now, did you, yourself, make any observation

(Testimony of Roland F. Kaser.)

as to the water which was flowing out of the diversion sump of the Bagdad Copper Company and on down the river?

A. Yes; I did. On that particular occasion I walked down in the channel below the pump pool and made a deliberate attempt to estimate the flow. I estimated the width and cross section and the depth and the velocity and judged there was 15 second feet flowing.

Q. 15 second feet flowing out of the sump and on down the river? A. Yes; surface flow.

Q. Did you actually get down into the stream in the sense of taking off your shoes and walking through it? A. Yes; I did.

Q. Did you, for your own purpose, take a [256] couple of pictures at that time? A. Yes.

Q. Do you have those with you? A. Yes.

The Court: Well, it is 12:00 now. We will suspend until 1:30.

(Thereupon, a recess was taken at 12:00 o'clock noon.)

1:30 o'Clock P.M.

(All parties as heretofore noted by the Clerk's record being present, the trial resumed as follows.)

Mr. Wilmer: Mark these.

(Thereupon, the documents were marked as Defendant's Exhibits I and J for identification.)

## ROLAND F. KASER

resumed the witness stand and testified further as follows:

Direct Examination  
(Resumed)

By Mr. Wilmer:

Q. I take it, Mr. Kaser, it is not an unusual thing for you to take snaps of the areas where you have visited for the purpose of observation?

A. No; I usually do that. [257]

Q. Referring to Defendant's I for identification, Mr. Kaser, will you state if that actually portrays the water running out of the Bagdad sump and on down Burro Creek?

A. Yes; I think it does. At the time I took the picture I didn't have anything particular in mind, no more than showing the general area, but it does show the flow going out at approximately the point where I made the estimate.

Q. Is that true likewise of Defendant's J?

A. Yes; those two are practically identical. I just took two to be sure I got one that would be good.

Mr. Wilmer: We offer these in evidence.

Mr. Cox: No objection.

(Thereupon, the documents were received and marked as Defendant's Exhibits I and J in evidence.)

Q. (By Mr. Wilmer): The point at which you measured and estimated the flow is in the left fore-

(Testimony of Roland F. Kaser.)

ground in each of those two exhibits, I and J, in evidence, is that right?

A. Yes; it would be approximately at the left edge of the picture.

Q. While you were there, Mr. Kaser, I believe you stated you left instructions for the installation of a gauge, is that correct? [258]

A. Yes; I had secured the enameled staff gauge sections.

Q. They are provided by the Bureau of Reclamation, is that correct?

A. Yes, and I left them there with Mr. Deacon for them to be installed and we selected a point at which the installation would be made, and I also requested that they take level notes on three cross sections in the area so I could compute the rating curve for that location.

Q. Did you subsequently receive from Mr. Deacon or someone there the survey notes of the cross sections you had requested? A. Yes.

Q. And from that did you compute a rating curve? A. Rating curve, yes.

Q. Did you likewise compute, Mr. Kaser, the amount of water which would be flowing and down the river at a given point on the gauge?

A. That is what a rating curve means. It is the discharge corresponding to certain gauge readings.

Q. I believe you testified, Mr. Kaser, that you found there was 25 second feet of water flowing out of the sump and down Burro Creek while you [259] were there? A. 15.



(Testimony of Roland F. Kaser.)

Q. 15; I am sorry; 15. Did you find there was any water flowing from Boulder Creek into Burro Creek?

A. I walked into the channel of Boulder Creek just above its mouth, which is where it joins Burro Creek, and the water was in pools between the rocks, however, the best estimate I could make of that was a quarter of a second foot.

Q. Quarter of a second foot?

A. That is a quarter cubic foot per second.

Q. Now, Mr. Kaser, transposing that into gallons, can you tell me how many gallons the 15 second feet represented which was flowing out of the sump and down the river?

A. That is about 6,700 gallons per minute.

Q. 6,700 gallons per minute, and then that would mean 60 times that amount per hour?

A. That is correct.

Q. I believe we computed that this morning as 403,200. Do you recall if that is approximately correct?

A. That is approximately correct.

Q. And on a 24-hour basis, which you also have, it would be 9,676,800 gallons of water in a [260] 24-hour period flowing down the creek?

A. That is approximately correct.

Q. Can you tell me offhand what a quarter second foot would represent in gallons?

A. Well, one second foot is approximately 450 gallons per minute, so a quarter would be 112.

Q. And you recall that amounts to approximately 161,280 gallons?

(Testimony of Roland F. Kaser.)

A. That is approximately right.

Q. Or a grand total of 9,838,080 feet of water—gallons of water in a 24-hour period flowing down Burro Creek? A. Yes.

Q. Did you receive—I believe you stated you did make the rating curve as applied, with information to Mr. Deacon, is that right?

A. That is right.

Q. Have you been back since that time, Mr. Kaser?

A. Yes; I was in Bagdad on the 23rd and 24th of February, just two weeks ago, and for the purpose of securing data to check the original computations that I had made.

Q. Did you find the gauge installed as you had—

A. This gauge was installed and we took [261] level notes on the actual water slope and computed the check points on my rating curve.

Q. And did you find your original rating curve had been substantially correct? A. Yes.

Q. From the time that the gauge was installed and to the present time, have you received daily from the observation station their reports on the flow in Burro Creek?

A. Yes; we have not received the gauge readings every day. That is, our problem is mainly high flows, however, we have received gauge readings every four or five days, and in the intervening days we received a report such as the normal flow, something that would serve our purpose.

(Testimony of Roland F. Kaser.)

Mr. Wilmer: Mark that, please.

(Thereupon, the document was marked as Defendant's Exhibit K for identification.)

Mr. Wilmer: I hand you Defendant's Exhibit K for identification. I am not sure whether this is a fair question or not. Do you recall if that is the rating curve, did you say?

A. Yes; if I could check it with the copy of what I have here.

(The witness checks over documents.) [262]

A. Yes; that is correct.

Q. Will you state what this is, please, then, Mr. Kaser?

A. We call that a rating table for the Burro Creek staff gauge. That is a table where the curve would be a diagram to show the curve line of the cross section.

Q. The first column of figures which has as its first figure .25 feet. What does that represent with respect to the gauge?

A. Well, that is the elevation of the water surface where—that is the elevation of it on the gauge staff and the graduations.

Q. In other words, reading on the .25 feet on the gauge would indicate 5 second feet and also indicate 224 gallons per minute?

A. Yes; five-tenths of a second—

Q. I mean five-tenths of a second foot. That reading of .5 on the gauge would indicate 10 second

(Testimony of Roland F. Kaser.)

feet? A. Yes, sir.

Q. And 4,488 gallons per minute? A. Yes.

Q. And a reading of 1 on the gauge would indicate 30 second feet per minute or 13,465 gallons per minute? [263]

A. 30 second feet. Don't put the "per minute" on there.

Mr. Cox: In this calculation—pardon me, on voir dire—this calculation is based upon your measurements at Burro Creek as to what that would be on the gauge?

A. Yes, sir.

Mr. Cox: No objection.

Mr. Wilmer: I might say for the purpose—this is being introduced for the purpose of testimony which is to follow as to the readings on the gauge. We offer it in evidence.

Mr. Cox: No objection.

(Thereupon, the document was received as Defendant's Exhibit K in evidence.)

Q. (By Mr. Wilmer): Why does the amount of gallons per minute increase from 224 gallons per minute at .25 feet, to 4,488 gallons per minute at .5 feet?

A. Well, that is due to the—as the elevation of water surface increases, the width of the channel increases rapidly and the velocity increases as the square of the increase, so that the curve is not a straight line, it is a curved line.

Mr. Wilmer: Cross-examine. [264]

(Testimony of Roland F. Kaser.)

Cross-Examination

By Mr. Cox:

Q. Mr. Kaser, now just where on the Bagdad sump were those gauges installed? Let's pick one of these pictures. Do your pictures here show this?

A. The gauge is not—was not installed at this time. However, it is right on this corner right there (indicating).

Q. Let's see if we can find a better picture.

A. There is a picture that shows the pump intake would be better.

Q. Is that better?

A. Yes. It is right on the—mounted on the bracket right on the corner of this rock.

Q. All right. Let's just mark that Plaintiffs' Exhibit 2 in evidence with a "G" for gauge where that is mounted, if you will, please, sir.

A. (Witness complies.) It is mounted vertically and enters the water about that shape.

Q. Referring to Defendant's Exhibits I and J in evidence, the pictures that you took that shows water flowing over on the left-hand margin of the picture, that is from their sump, is it not?

A. That is right.

Q. If there is any flow there, does the [265] water flow over that?

A. Well, that shows the surface flow. Now, this is a gravel bar here and it is entirely possible for an appreciable amount of water to be going through it.



(Testimony of Roland F. Kaser.)

Q. What is the nature of the bed of Burro Creek?

A. Well, it is just a river bed, typical river bed material. It is loose rock and boulders and gravel and it is all porous.

Q. Does that flow primarily through pretty solid rock in the surrounding country?

A. Well, the bed of the stream as to solid rock is down below the actual water surface. I don't know how far, but there is loose material in the bed.

Q. There is loose material in the bed?

A. Yes.

Q. You don't know how much?           A. No.

Q. Have you observed Burro Creek in flood times?

A. Yes; two weeks ago, that was on the 24th of February, I was there.

Q. How long have you been getting information on Burro Creek?

A. Well, I actually started the observations [266] in connection with our flood warning system in December, 1946, and while we had no gauge, we received reports on estimated increase of the flow.

Q. How high does that flow up on the bank?

A. Well, the flood that I came over last August, on August 10th to observe, it had been reported to me that the water had come, the surface had come up between six and seven feet, and while I didn't actually run levels at the time, I was there on August 10th. I stood at the water's edge and could see

(Testimony of Roland F. Kaser.)

it was above my head on the bank where the top of the debris had lodged.

Q. Could you see evidence of prior floods?

A. At higher than that, oh, yes.

Q. The floods in Burro Creek, in fact, go up to as high as 20 feet, don't they? A. Oh, yes.

Q. And is it possible that with a flooding condition of that type to install any type of a dam or retain—

A. Well, it is possible if you want to go to enough expense. That is the limiting factor there, is the structure that can be built.

Q. To withstand those floods?

A. To withstand those floods. However, [267] probably immaterial, but it is much cheaper to clean out the sump than to build something that would stand any flood you might get in that type of stream.

Q. Showing you Defendant's Exhibit D for identification, the pipe shown there has been testified to be a two-inch galvanized pipe. To give you an idea of the size, and you can see the grass. Calling your attention to the point where the arrows are, the narrow portion being the inlet that leads into this sump. From that picture, can you determine, assuming that the arrows, which are approximately one foot wide and four inches deep, what water is flowing in there, taking into account the position of the grass and other things that you can see there?

A. I don't believe that I can from this photograph. If I had observed the site, then I could relate

(Testimony of Roland F. Kaser.)

the actual observation to the picture and I probably would be able to, but from this picture I would not be able to estimate the velocity.

Q. Assuming, Mr. Kaser, further that there would be no visible flow at that point, according to the witness, would that have any bearing on how much water was going into that sump? [268]

A. Well, since apparently from the looks of these surroundings and what I know about the Burro Creek channel, I would say there might be an infloat to this sump from underground sources coming actually around here and not necessarily through that little opening where the water is.

Q. From your testimony, through that opening would you say there was any appreciable amount of water coming in through that?

A. It is difficult to say from this photograph. They may be shadows——

Q. Assuming there is no visible flow.

A. No visible flow. I would not like to make any estimate on what the flow would be. If there is no visible flow there, it would be very small.

Q. In fact, it would not be over probably 20 to 25 gallons a minute at the most?

A. I presume that would be——

Q. The maximum?

A. If we can assume there is no visible velocity to the water.

Q. In the summer I believe that you—you say you put it in in '47?

A. You mean——

Q. Started to checking Burro Creek. [269]

(Testimony of Roland F. Kaser.)

A. No; that was in December, '46.

Q. December, '46. Was there water in Burro Creek in '47, in the summer of '47, flowing water?

A. I didn't make any visits to Burro Creek during the summer of '47.

Q. Did your report show any water in Burro Creek in '47?

A. The reports indicated that the flow was about the same as it was in December, '46, when I observed it, and at that time I estimated about five second feet flowing out of the pump.

Q. And those were reports made by the—or the man that was representing you, or sent you the reports from the Bagdad Corporation?

A. Yes; he reported the normal flow, which means no change.

Q. This summer?           A. Yes.

Q. Did your reports show, during the summer of 1948, a normal flow all summer?

A. No. During the latter part of July they reported some flood rises and also during, as I said, in the morning of the 5th of August, they reported the water level was up six feet. On the morning of the 6th of August, it was up two feet above [270] normal.

Q. Then the pictures that you took here were immediately following the flood?

A. They were on the 10th. They represented a part of the recession from that very flood. They were still a little above normal for that time of year.



(Testimony of Roland F. Kaser.)

Q. Did your reports show that the flood in Burro Creek was below normal at any time in the summer of '48?

A. Yes. From informal reports that I had, I understood that the flow was quite low in the first part of July and the latter part of June. You see, that is typical of all of the streams in this general area.

Q. And you say that the flow shown from Defendant's Exhibits C, D and E, and Plaintiffs' Exhibit 6, would indicate a normal flow for Burro Creek?

A. Well, due to the intermittent nature of the flow in Burro Creek; that is, the low water flow, I couldn't say anything about the points that I just actually observed, because, as I understand it, the flow—a part of it is underground flow in different parts of the stream and it will flow on the surface for a certain distance and then it may flow through the gravel and then [271] reappear again, so I have never seen these points that are shown by these three photographs. These photographs here, I would say——

Q. Indicating Plaintiffs' 6.

A. ——was below the normal, yes, Plaintiffs' Exhibit 6 would indicate below normal flow.

Q. Would you say considerably below normal?

A. Well, yes, I would.

Q. And that is speaking of the water that is coming downstream from the sump?

A. Yes.

Mr. Cox: That is all.



Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mr. Adams.

A. D. LON ADAMS

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. A. D. Lon Adams.

Q. Where do you reside?

A. I am residing at Bagdad. [272]

Q. What is your business?

A. Superintendent of Schools.

Q. What area do you have under your supervision?

A. Bagdad School District No. 20, Yavapai County.

Q. Do you have any hobby, Mr. Adams?

A. I do.

Q. What is that?

A. I have two of them, prospecting and hunting.

Q. In the summer of '48, Mr. Adams, in connection with your hobby of prospecting, did you have occasion from time to time to go to Burro Creek?

A. I did.

Q. You are familiar, of course, with the crossing that is known as the Kingman Cut-off Crossing?

A. I am.

(Testimony of A. D. Lon Adams.)

Q. Through the summer of '48, how many times would you say you had occasion to cross there?

A. Three different times.

Q. Do you recall when it was? A. Yes, sir.

Q. Would you tell us?

A. I crossed in the early morning of May, [273] I was down at some little claims there that Mr. Belnap, Ora Belnap and myself staked out. I happened to be down there with two friends of mine down in Phoenix, Mr. and Mrs. A. L. Morris.

Q. Later in May did you have occasion to be out there?

A. I did. It was about the 6th day of July. On that particular occasion I was returning from Kingman where I had been inspecting some War Surplus property that I was interested in acquiring for my school.

Q. On that occasion did you see others cross the creek at that point?

A. No, I just crossed the creek at that point on that particular occasion.

Q. Do you recall, Mr. Adams, what the condition of the water was at the crossing?

A. I do.

Q. What was it?

A. There was water at the crossing. I noticed that in particular at the crossing when it dips in slightly, that there was water practically up to the running board, that is up to the lower part of the body of my '46 Dodge Sedan, and I noticed on the

(Testimony of A. D. Lon Adams.)

ripple, the water ripple on my right downstream that there was running water over the ripples. [274]

Q. Do you have a recollection, Mr. Adams, as to approximately how wide the stream of running water was?

A. Well, I couldn't say exactly. Just at the crossing it looked to me like it was probably spread out over an area of probably 20 feet or so.

Q. And do you recall how deep it was, or do you remember?

A. Observing from just driving through, it looked to be several inches deep. I wouldn't know exactly.

Q. Then did you have occasion to go there again, Mr. Adams?      A. I did.

Q. When was that?

A. That was about July 24th and 25th.

Q. What was the occasion for your going there then?

A. I had an appointment with Mr. Mort Gimbal, a person who is engaged in mining in Yavapai County, and Mr. E. A. Girard, and a mutual friend, to go over and look at some property in Mohave County at the Esperenza Mine, which is owned by Mr. Ed Hansen of Kingman. We went there to make an inspection of that mine with the idea of, perhaps, a Mr. Gnice being interested in taking a [275] lease on it. That is out in the South Wallapai area down in what is known as Cedar Valley.

Q. To what extent did you have an opportunity

(Testimony of A. D. Lon Adams.)

to observe Burro Creek and the water in it at that time?

A. We crossed Burro Creek going into this mine en route to this old mine over in Mohave County out west of Yucca, and on the next day, on a return trip, we also had occasion to cross Burro Creek at the Kingman Crossing again.

Q. Do you recall the water condition at that time?      A. I do.

Q. What was it?

A. It was in about the same condition at that time as it was when I previously crossed it. It was slightly lower, perhaps, but not any material difference.

Q. That was on your trip over and on your trip back?

A. On my trip over and back, over one day and back the next day.

Q. Are you familiar with the Burro Creek bed or canyon below the crossing, Mr. Adams?

A. Not for any length of distance, down perhaps three or four hundred yards, probably 250 yards, [276] maybe, just down in where it starts into the gorge, the box.

Q. You know that as a matter of fact, that below the crossing, at least for some distance, it comes out onto bedrock?

A. I wouldn't necessarily say it came out onto bedrock, because I don't know for sure. I do know the water comes up here and crosses, and that runs through that particular area.

(Testimony of A. D. Lon Adams.)

Q. And enters this gorge?

A. Yes, the gorge comes through there, starts to form.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Cox:

Q. You and your partner are interested with Mr. Dickey there and get their water from Bagdad, aren't you?      A. I am not.

Q. You are not. Are any of your interests—are you getting any water other than for the school at Bagdad?

A. I am for my house, which I call my residence.

Q. The school does not pay anything for water?

A. We do not. [277]

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mr. Bogart.

### ROBERT C. BOGART

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

### Direct Examination

By Mr. Wilmer:

Q. What is your name?

A. Robert C. Bogart.

Q. What is your occupation?



(Testimony of Robert C. Bogart.)

A. I am a surveyor.

Q. And by whom are you employed?

A. Bagdad Copper Corporation.

Q. Were you working for that Company in August of last year?      A. Yes, sir.

Q. Along about the 4th and 5th of August, what were you doing, Bob?

A. I went to Burro Creek to make a preliminary survey for a damsite.

Q. You know where the sump is in the creek?

A. Yes, sir. [278]

Q. You know where the sump is in the creek?

A. Yes, sir.

Q. With respect to that sump, where were you making a survey?

A. About a mile and a half upstream.

Q. And who was with you?

A. E. A. Girard, Jr., and Louis Siegert.

Q. You packed in, did you?      A. Yes, sir.

Q. Now, do you recall anything unusual happening one night there?

A. Yes, sir.

Q. What was it?

A. We were washed out. We were camped in the creek bottom and, I'd say about four or five feet above the channel, about 10:00 o'clock that night the water came through our camp, so we moved to higher ground, I would say 10 or 12 feet higher on up to a ledge, and about 11:30 or 12:00 that night, it was lapping at the toes of our sleeping bags.

(Testimony of Robert C. Bogart.)

Q. Were you, as a matter of fact, able to get back to Bagdad the next day?

A. No, sir. We climbed out of the canyon that night and about 600 feet up, and camped there until about 7:00 o'clock the next morning, and [279] walked back to the Boulder—Burro pumping station, and we were unable to cross the creek.

Q. That was because of what?

A. The flood.

Q. Did you lose any part of your camping equipment?

A. Yes, sir.

Q. Were you able to get anything to eat that day?

A. We were about 10:00 o'clock. Mr. Kelsey is the pumping man there, he threw us a line across the creek and then we pulled a telephone wire across and he slid us some breakfast, you might say, across to us that way.

Q. How did you get back ultimately?

A. Well, later that afternoon the water was going down some and we left all of our equipment on the opposite side and we waded about waist deep or deeper in places by hanging onto the—we call them water moodies, or air weed, and waded across that way.

Mr. Wilmer: Cross-examine. [280]

(Testimony of Robert C. Bogart.)

Cross-Examination

By Mr. Cox:

Q. Now, the water runs quite rapidly in that flood? A. Yes, sir.

Q. You had been camped in the creek bed?

A. Yes, sir.

Q. And then you finally moved up about 11 or 12 feet above the bed? A. Yes, sir.

Q. The water was right up about that high, you say?

A. That was the second rise about 11:00 o'clock.

Q. Now, that was about 11:00 o'clock at night?

A. Yes, sir.

Q. Then the next night is when you ate?

A. No, the following morning.

Q. It was the following morning that you got out and they slid you breakfast?

A. Yes, sir.

Q. When did you cross?

A. That same afternoon about 3:30 or 4:00 o'clock.

Q. About what time of the night would you say that this came up, the flood came up? [281]

A. There was two rises.

Q. Well, the first rise.

A. Well, I'd say about nine o'clock.

Q. And then about three or four o'clock the next afternoon you crossed? A. Yes, sir.

Q. So between nine o'clock at night, the flood—the water came up to first six feet and then eleven

(Testimony of Robert C. Bogart.)

or twelve feet, and then by three o'clock the next afternoon it was down at least low enough so that you could go across it without being washed downstream?

A. There is a condition there that enters into it. The damsite I was surveying was the narrowest part of the canyon, naturally, and the point where the pump station is, is quite wide, and it is spread out over a considerable distance.

Q. Did you see the water there the next day?

A. No, sir.

Q. And that was—when was that? Was that the 5th, you say, of August?

A. We went up there on August 3rd, and surveyed as much as we could on August 4th, and that was the day, that very night.

Q. The night of August 4th?

A. Yes, and the morning that would carry [282] over.

Q. And at the time you camped down on the creek bed, did you observe the flow of the creek at the time you camped?

A. Yes, we, the morning that we went up there on the 3rd was quite cloudy and drizzling rain, and we didn't know whether to go or not. We thought, well, maybe it was just one of those summer things, and it would pass over, so Mr. Kelsey and Louis Siegert—

Q. You did observe the flow where you camped?

A. Sure, went swimming in it.

Q. Went swimming in it and the flow, how wide was the creek bed there at that point?

(Testimony of Robert C. Bogart.)

A. Where?

Q. Where you camped?

A. Well, pretty rough. It kind of varies. It has no pools, but the main channel, I'd say, is 30 or 40 feet wide.

Q. Is there any place there where it is flowing over rocks at that point?

A. Oh, yes, it is in and out.

Q. If you are surveying a damsite there is bed-rock right close to the creek?

A. Absolutely.

Q. And is there a point there where you did observe water flowing that day, on the third [283] day, I am talking about?

A. Surely.

Q. How deep was the water flowing there, I don't mean in the pools?

A. That is a little bit out of my line. I couldn't say at any one particular place there.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

### C. S. STAGGS

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. What is your name?

A. C. S. Staggs.



(Testimony of C. S. Staggs.)

Q. Where do you live? A. Bagdad.

Q. What is your occupation?

A. Well, I am on the construction gang on the surface.

Q. Pardon?

A. I am on the construction gang on the surface. I have been in charge of some of the building. [284]

Q. You are employed by Bagdad?

A. That is right.

Q. In the summer of '48 did you have occasion to go to Kingman on a number of occasions?

A. I did.

Q. How many times? A. Three times.

Q. And what was your business in going there?

A. Well, we had purchased a building at Kingman and I went up to take it down and move it to Bagdad.

Q. Do you recall the dates when you went up there? A. I do.

Q. What were they?

A. I went up on the 16th of July.

Q. And what route did you take going up?

A. We went up on what we call the Kingman cut-off.

Q. Did you go back the same way?

A. Yes, sir.

Q. Then when did you go up again?

A. About three or four days later.

Q. And did you come back the same way?

A. After the job was completed.

(Testimony of C. S. Staggs.)

Q. No, I mean those three trips. [285]

A. Each of the three trips were over the same route.

Q. When was the job completed?

A. About the 14th of August, I believe.

Q. Do you recall the condition of the water at the Kingman Crossing on Burro Creek?

A. I do.

Q. What was it on the first trip?

A. Well, just roughly, just looking at it as we crossed the creek, I would say it was possibly three to five inches deep and possibly five feet wide.

Q. Was that at the crossing or away from the crossing?

A. Just below the crossing.

Q. What was the condition at the crossing?

A. The water was under the running board of our car.

Q. Was that true on each of the occasions when you went up there?

A. Yes, sir.

Mr. Wilmer: Cross-examine.

#### Cross-Examination

By Mr. Cox:

Q. You say the water was under the running board of your car, I didn't quite understand? [286]

A. Up to the bottom of the running board.

Q. Up to the bottom of the running board?

A. Yes, sir; that is right.

Q. And the ruts where the cars go through would make that lower, you say, three to five inches deep?

(Testimony of C. S. Staggs.)

A. That is right, right at the crossing, the car ruts.

Q. Do you know how much water there was at any time on down the river a few miles anywhere the Zannaras property?      A. No, sir.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: Mr. Davis.

### GEORGE H. DAVIS

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. George H. Davis.

Q. You live at Bagdad? [287]      A. Yes, sir.

Q. And are you employed by the Bagdad Company?      A. Yes, sir.

Q. How long have you lived there, Mr. Davis?

A. I first hired out to Bagdad in '36, January.

Q. And have you lived there ever since?

A. Except a couple of occasions when—one occasion when the mine was shut down I was gone for a year or a year and a half while the mine was closed.

Q. Are you quite familiar with Burro Creek, Mr. Davis?

(Testimony of George H. Davis.)

A. Well, to a point of crossing and picnics.

Q. Where do you go to picnic?

A. Well, we used to go down Burro Creek crossing or on the Kingman Road.

Q. Would you picnic right at the crossing?

A. Well, just across the creek there is some big trees and we generally picnic there and swim and play on the playgrounds there.

Q. During the entire time you have lived there, Mr. Davis, have you regularly gone fishing in Burro Creek?      A. No, sir.

Q. Have you fished there at all?

A. Yes—well, not with regular tackle, with [288] a hook and a piece of string just merely to kill time. When we went on a picnic we put a fishhook on a string before we left for somebody to try.

Q. Have you gone swimming there?

A. Yes, sir.

Q. Where is the swimming places?

A. Well, there is some little pools down there, I don't know how far it is. It seems like maybe a couple, three hundred yards, something like that, below the crossing.

Q. Below the crossing, and on down, is it rather more of a rocky canyon-like formation than above, or do you know?

A. Yes, it is. It kind of drops off big rocks. You can't see very far down, but you can look up the canyon for quite some distance.

Q. Mr. Davis, last summer did you have occasion

(Testimony of George H. Davis.)

in your employment to go to Kingman a number of times?      A. I did.

Q. Why would you go there?

A. I drive a ten-wheel truck. I may send men any place they decide they want to get something, and I was over there hauling a building back. I'd go through there empty. If the load was larger and I could make it with the load on the climb, then I'd go around by Prescott, so I'd go through [289] there empty and come back through Prescott loaded.

Q. How many times did you go up?

A. Well, I don't know exactly, something like three or four times, I think four times.

Q. Do you recall the condition of the water at the Kingman Crossing?

A. Well, I know when I crossed there the water was further across than the length of my truck, which is better than 20 feet long, and it is deep enough in there that you darsent stop that truck in there because it had rocks in there big enough to give you trouble to get out again.

Q. Do you remember whether or not there was a stream of running water below the crossing at all times?

A. Yes, sir. You could see the water from the cab of the truck looking downstream.

Q. Do you know of one particular occasion, Mr. Davis, when you recall you had to wait to wade the stream?

A. I do. There was a man had a little truck



(Testimony of George H. Davis.)

and he had one of them little hand wagons. I call them an orchard pump, and he had these fellows standing in the crossing, standing out on the creek pumping out there. There is no passing anybody at the crossing, so you have to stay there and [290] wait to get across, so I stayed there and waited to get across.

Q. Do you have any recollection of looking downstream, as to about how wide the stream of water was?

A. Well, you can see the water running in through the rocks there on, six or eight feet wide, I guess.

Q. This was in July and the fore part of August, 1948?

A. Yes.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Cox:

Q. When did you last picnic there, Mr. Davis?

A. Oh, that was in, some time about, '39 or '40. I believe it was—must have been '39. I was down there with the family picnicking and actually took a trip down there to picnic.

Q. That was the last fishing that was done there?

A. Yes, sir.

Q. You have any friends fishing in there recently?

A. Well, not that I know of. I don't know. [291] I don't get out to do much fishing. I don't have

(Testimony of George H. Davis.)

time and I don't follow fishing. I don't have time to set around and do that.

Q. Do you know anything about the water on downstream several miles of Mr. Zannaras' place?

A. No, sir.

Q. You don't know whether there is any water there or is not?

A. I don't even know his place down there, I haven't been over a hundred yards.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

### G. A. KELLIS

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

### Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. G. A. Kellis.

Q. And where do you live?

A. I live on Burro Creek.

Q. What is your occupation, Mr. Kellis?

A. Well, when I ran pumps, water pumps [292] on Burro Creek was for the Bagdad Mine.

Q. You had charge of the pump down at the Burro Creek which takes the water out of Burro Creek and pumps it up the hill, is that right?

A. I do, yes, sir.

(Testimony of G. A. Kellis.)

Q. How long have you been there?

A. I went there on the 24th day of August in '45, I believe.

Q. And do you do anything besides that, Mr. Kellis?

A. Well, occasionally I go fishing down the creek or up in the hills sometimes.

Q. Pretty good fishing there?

A. Fairly good at times when you catch anything.

Q. Mr. Kellis, included with your duties as caretaker for the pumps since August 8th or 9th, '48, have you had the job of observing daily the height of the water on the gauge in the creek?

A. Yes, sir.

Q. I say, has that been a part of your job to do that?

A. Been a part of the job.

Q. Do you live there yourself?

A. My wife lives with me.

Q. You and she, one or the other, are there [293] all the time?      A. Yes.

Mr. Wilmer: Mark this, please.

(Thereupon, the document was marked as Defendant's Exhibit L for Identification.)

Q. Mr. Kellis, I am going to hand you Defendant's L for identification. Is that in your handwriting?      A. Yes, sir.

Q. And is that a record of your readings of the gauge beginning with September 1st and concluding

(Testimony of G. A. Kellis.)

with February 28th of '49?      A. Yes, sir.

Q. Now, I note that in the first column; that is, the top of the first column, there is the words "September Water Record," '48. Immediately below that there is 15. What do these represent, the days of the month?      A. Days of the month, yes, sir.

Q. And the figures immediately below that represent—      A. Gauge of the water.

Q. Gauge reading?      A. Yes, sir.

Q. Now, I notice in the first, that is, column readings of 1 to 15, and in some of the [294] others there appears to be a decimal point or reading for September, would be 2.0. That actually should be .2, should it?      A. Yes, sir.

Q. And the one that reads .18 should actually be point—I mean 1.8 should actually be——

Mr. Cox: Just a moment, pardon——

Mr. Wilmer: What I am trying to say is somebody made a mistake and stuck some decimal point in there where it would make the reading far higher than it should be——

Mr. Cox: Well, let the——

Q. (By Mr. Wilmer): Will you state whether those decimal points that are on there were put there by you, Mr. Kellis?      A. Yes, sir.

Q. The decimal points I am referring to, I mean the points for September 1 should actually be what?

Mr. Cox: Just a moment. I object to the form of the question. Let him just tell what it should be. If he did put it there, let him say he did.

The Court: Who prepared this document?

(Testimony of G. A. Kellis.)

Mr. Wilmer: Mr. Kellis did, but I can prove by another witness, your Honor, that these [295] decimal points were put on there by error through a clerk in the office in copying this. We have copied a typewritten copy of this transcript there just for the purpose of simplifying the reading of it. The first day of September as it is on here, reads, 2.0, which would be manifestly to our benefit to leave it that way, but it is actually .02 rather than——

Mr. Cox: Well——

Mr. Wilmer: I can prove it by Mr. Dickey.

Mr. Cox: Would you let me ask him a question?

Mr. Wilmer: Let me conclude my cross-examination.

Mr. Cox: I say, then, just ask him, then, and don't testify for him.

Q. (By Mr. Wilmer): What time of day were those readings made, Mr. Kellis?

A. They varied. Some days I got down there at seven o'clock some mornings, always in the morning, in the fore part of the morning where I'd read the gauge, and it was transferred then to my calendar, the reading was on the gauge, seven or eight o'clock in the morning.

Q. All right. The figure which appears below the date indicates the height of the water on the gauge in the creek? [296]

A. Yes, sir; that is right.

Q. And each one of these readings of the gauge should have a decimal point in front of it, is that right?

A. Yes, sir.



(Testimony of G. A. Kellis.)

Mr. Wilmer: We offer Defendant's L for identification in evidence.

Mr. Cox: Might I understand, Mr. Wilmer, there should be no decimal points on this, and they should be considered hundredths?

Mr. Wilmer: This is what it should be.

Mr. Cox: There is no objection, with that understanding.

(Thereupon, the document was received as Defendant's Exhibit L in evidence.)

Water Reading in Burro Creek

September Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.20	.18	.20	.22	.20	.20	.18	.18	.22	.20	.22	.24	.22	.22	.24
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.30	.32	.30	.30	.30	.32	.30	.32	.34	.34	.34	.32	.32	.34	.32

October Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.33	.32	.33	.32
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.32	.32	.33	.90	.92	.90	.90	.90	.80	.80	.80	.80	.80	.80	.80

31  
1.00

November Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.80	.50	.50	.50	.50

December Water Record

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Gauge Reading	.60	.50	.50	.50	.50	.50	.50	.50	.51	.50	.50	.60	.60	.60	.60
Date	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gauge Reading	.60	.60	.60	.60	.60	.65	.70	.90	.98	.98	.94	.90	.90	.90	.90

31

.90



Left water report														2723
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1.8	2.0	2.1	2.0	2.0	1.8	1.8	2.2	2.0	2.1	2.2	2.2	2.2	2.2	2.2
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
32	30	30	30	32	30	32	34	34	34	32	32	32	32	32
Left 19 x 8														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
32	33	30	32	30	30	30	30	30	30	30	30	30	30	30
Over 19 x 8														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Over 19 x 8														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	
50	50	50	50	50	50	50	50	50	50	50	60	60	60	60
17	18	19	20	21	22	23	24	25	26	27	28	29	30	
60	60	60	60	65	70	70	70	70	70	70	90	90	90	90





297C

March 1949

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Feb 1949

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Admitted and filed March 4, 1949

Case No. 221 But.

MARKED FOR IDENTIFICATION  
MAR 4 1949  
ADMITTED AND FILED  
MAR 4 1949

W H LIVERLESS, Clerk  
UNITED STATES DIST. CT COURT  
FOR THE DISTRICT OF ARIZONA  
BY Melvin J. Larson  
Deputy Clerk



(Testimony of G. A. Kellis.)

Mr. Wilmer: Mr. Kellis, do you—pardon me—for the purpose of simplification, I would like, if I might, to attach to this exhibit and which will be his verifying the typewritten compilation of this. This, however, carries over to December, does not carry through January and February, which he didn't regard as being important.

Q. Mr. Kellis, do you recall the flood which occurred on the 5th or 6th—4th or 5th of August?

A. Yes; I do. [297]

Q. And do you recall the predicament that Mr. Bogard was in? A. Yes, sir.

Q. At about that time had the flow of water in Burro Creek been normal or below normal?

A. Well, it had been normal, oh, for some period; that is, I will say on the first of August we had a little rise, a flash came on down each day with a gain of water up until then, until the night of the 4th, I believe, and then for a few days afterwards.

Q. You have been down there at that point how long, Mr. Kellis?

A. I have been there since August of '45.

Q. How long have you been familiar with Burro Creek? A. Since that time.

Q. Mr. Kellis, immediately below the sump out of which the water is drawn, is there a place where—strike that. When the water in Burro Creek is low or down to just normal summer condition, will the water flow over, or overflow out of the sump?

A. Well, no. Immediately below, I will say a couple of hundred yards, why, the water comes to

(Testimony of G. A. Kellis.)

the surface and there is always water flowing [298] below there, evidently it goes through the sand and gravel.

Q. In what quantities?

A. Well, I couldn't say.

Mr. Wilmer: Cross-examine.

### Cross-Examination

By Mr. Cox:

Q. You say you took these readings every morning? A. Yes.

Q. Is there any difference between the flow on Burro Creek in the mornings or any different times of the day, night and day?

A. Well, unless there is a flash flood or something of the kind to make a difference, and it is always higher in the mornings, early in the mornings, I suppose, due to less evaporation than there would be in the afternoons.

Q. And just a normal condition, the highest flow is in the mornings?

A. Evidently, yes, sir.

Q. Did you take any readings in the afternoons?

A. No, I don't believe I have. I always take them in the mornings. I believe a few times, I [299] can speak of one that I can recall to mind, that in the afternoon, in the morning it was low, because of a flash flood during the daytime, and I read the gauge in the afternoon.

Q. That was only in the event of a flash flood?

A. That is right.

(Testimony of G. A. Kellis.)

Q. And on a normal flow, the flow was considerably less in the middle of the afternoon than it would be earlier in the morning?

A. Yes, flash up there in the night, always does that.

Q. Are you on duty there 24 hours a day?

A. My wife or I, yes, sir, one or the other.

Q. One or the other? A. All the time.

Q. Are the pumps there working 24 hours a day, Mr. Kellis? A. No, not all the time, no.

Q. Was there any time in the last four or five months when they have not been working?

A. Well, only when the creek was low.

Q. When was that?

A. Well, I can't state very sure what times it was.

Q. For how long a period were you shut [300] down?

A. Well, when the water would get low, why, we would—you see, our suction when it is so far down and then it interferes with the picking of water up when it gets that low, and then we have to shut down the pump until the water rises, or we don't get water in the pump.

Q. In other words, there were periods this summer when you would have to—your pump would get all the water out of the sump until it would suck air?

A. Yes, sir, would not get all of the water out, no, sir.

Q. You would get it to the point where your



(Testimony of G. A. Kellis.)

intake valve would suck air?           A. Yes, sir.

Q. And then you would have to wait for the water to fill back up in the sump?

A. Yes, sir.

Q. Before you could start again, and how long were you shut down, Mr. Kellis?

A. Well, I couldn't say. It varies certain hours and——

Q. It takes several hours to fill back up and you can run it again?           A. Yes, sir.

Q. Now, the valve on your water pump [301] where you are taking it in, is that several feet below the surface there of the water normally?

A. Well——

Q. How far down is it?

A. In normal times I'd say it would be three feet below the surface of the water.

Q. And has that been cleaned out there so that the valve could go down as far as possible?

A. The motor can only go down at the end of the ladder, that is as far as that can go, and, of course, there is the suction on down a little.

Q. But there is a suction down below that?

A. Yes.

Q. And the end of the suction valve is several feet below the surface of the water?

A. I would not say the surface, about three feet.

Q. About three feet?           A. Yes.

Q. Now, is this, looking at that picture, you are familiar pretty much with the conditions around

(Testimony of G. A. Kellis.)

the sump, is the water there about normal, would you say, or is it low, or can you tell?

A. I just want to see what the date was.

Q. There is no date on it.

A. Well, I judge that that was [302] approximately normal, that is about normal, a little bit low, a little below normal. Probably that was taken when the water was at its lowest. I couldn't say for sure. I couldn't tell you until I see down below there.

Q. I was showing you Plaintiffs' 2. Showing you Plaintiffs' 6. If you saw this and I stated those were taken on the same day, would it help?

A. This is evidently the spillway from the pump.

Q. Here is the pump.

A. This is evidently the spillway there. Now, we pump until quite seldom we ever pump until the water would not run out of there, and when the water got low enough it barely would not run out, then we shut our pump down.

Q. Is that the point where your pump starts taking air?      A. Yes, sir.

Q. What size pump do you have there, Mr. Kellis?

A. We have a five-inch intake, I believe it is, I believe it is five inches, I would not be positive.

Q. Do you know how much water your pump pumps, the one there at Burro Creek?

A. Well, it is just an estimate, I suppose. [303]

Q. Well, taking from any figures of anything, how much it takes?

A. About 600 gallons, I guess, a minute.

(Testimony of G. A. Kellis.)

Q. How did you determine that?

A. Well, I think the pump is rated at 700 and evidently would not pump to efficiency at 700.

Q. How long have you been around Burro Creek, Mr. Kellis?

A. Since August 4th, 1945—24th.

Q. Have you been up and down the creek at all?

A. Some, yes, sir.

Q. Have you ever been down as far as Mr. Zannaras' place?

A. No, sir.

Q. Never have?

A. No, sir.

Q. Do you know whether or not it is possible there on the creek to build an artificial sump in order to take care of the water, to pump efficiently?

A. I couldn't say whether there would be.

Q. How high do the floods come in there, Mr. Kellis?

A. Well, since I have been there I have seen, I judge, eight feet, maybe ten. I have no way of determining it, just water marks on the—— [304]

Q. How high did it come there at the time the surveying party got caught?

A. Well, I believe that we estimated that was about seven feet, six or seven feet.

Q. Do you clean out your sump there?

A. The Bagdad Copper Company sends an outfit down there and cleans it out.

Q. Cleans out the sump?

A. Yes, sir.

Q. How deep is it down to the point where they strike rock?

(Testimony of G. A. Kellis.)

A. Well, just judging from the drag line when it was in there, I suppose when it is normal, I suppose it hits at least 15 feet.

Q. About 15 feet?

A. I judge so, yes, sir.

Q. Now, is your valve actually near the bottom of that?      A. No, sir.

Q. Do you recall seeing the two gentlemen sitting here last summer?      A. No, sir.

Q. Do you recall some gentlemen coming there in July and taking some pictures?

A. No, sir.

Q. Did you recall ever saying that you were [305] afraid you were running out of water in July?

A. Not that I remember of.

Q. Was that your opinion then that you were?

A. Well, the water was low, it was at the lowest ebb through July.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

### WALTER DAVID DEACON

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

#### Direct Examination

By Mr. Wilmer:

Q. Your name, please?

A. Walter David Deacon.

(Testimony of Walter David Deacon.)

Q. What is your occupation?

A. Chief electrician.

Q. For what? A. Bagdad Copper.

Q. How long have you had that occupation?

A. Since October, 1939.

Q. Have you done anything else there at Bagdad, Mr. Deacon?

A. In the last five years I have been weather observer for the Weather Bureau, and the last [306] two years as gauge reader for the Bureau of Reclamation.

Q. That is what type of gauge?

A. Well, the electrical gauges are meters in the substation, the temperature and the observation of water in the streams of the Santa Maria and Burro Creek and surrounding country.

Q. I believe Mr. Kaser testified about seeing you in Bagdad in August of last year?

A. Yes, sir.

Q. Did you go with him to the stream bed?

A. Yes, sir; Mr. Diamond, Mr. Kaser and myself.

Q. Under whose direction was the gauge installed that he testified to? A. Mr. Kaser's.

Q. In connection with the preparation of the flow curve? A. Yes.

Q. Did you do any work in connection with that?

A. No, I did not. That was up to the engineering department.

Q. Have you had occasion from time to time to observe the weather conditions—strike that. In the



(Testimony of Walter David Deacon.)

latter part of July, '48, will you state whether or not there was any unusual rainfall?

A. Yes, we had some rain in the last ten days [307] of July.

Q. Was it sufficient to reflect a rise in the curve?

A. Yes, we did. I have records if I can use them.

Q. Sure.

A. On the 20th of July, we had .55; 21st, .63; 22nd, .110. That is one inch and ten one-hundredths. On the 23rd we had .05, and then on the 25th—no, the 26th, we had .40.

Q. You have your record for August there?

A. Yes, sir, I have.

Q. Could you give us what the rainfall record for August was in the Bagdad area?

A. On August 1st, we had a trace during the night. On August 3rd, .55; August 5th, trace; August 6th, .02; August 7th, .41.

Q. Where is that gauge located?

A. Altitude 30 degrees and 36 minutes.

Q. I mean in respect to Bagdad.

A. In the lower part of the camp.

Q. In the camp itself? A. Yes.

Q. Mr. Deacon, without lengthening the matter too much with respect to the months of October and November, do your records reflect the normal or [308] above normal rainfall?

A. It was below normal rainfall in September. October, it was just about normal at .97.

Q. What about November?

A. November, we had none.

(Testimony of Walter David Deacon.)

Q. At the camp? A. Yes, sir.

Q. And what about December?

A. December was a very heavy month. We had 2.58 inches.

Q. Now, in the course of your work as observer, Mr. Deacon, are you familiar with the length of Burro Creek, or just familiar with it casually?

A. Just familiar with the pumping station, that area near the pumping station.

Mr. Wilmer: Cross-examine.

#### Cross-Examination

By Mr. Cox:

Q How much rain was there in July, the month of July—let's go on down while you are looking.

A. All right, sir.

Q. Do you have it there?

A. Yes, sir, for the last 30 years.

Q. What do you have for May and June, if you have it right there available? [309]

A. May, nothing; June, .10; July, 2.63; August, 1.03; September, .09; October, .97; November, none; December, 2.58.

Q. And you say you have this for the last—have you determined the normal rainfall for various months? A. Yes, sir.

Q. What is the normal rainfall for——

A. Not by the month, it is by the year. I have it here and it could be totaled up to get the normal.

Q. Then, what is the normal annual rainfall?

(Testimony of Walter David Deacon.)

A. The average is 15.09.

Q. For the year? A. Yes, sir.

Q. But you don't know how that is broken up, do you?

A. Only it is—that is the average taken ever since 1930.

Q. Maybe you can explain this to me. These are the months by years? A. Yes, sir.

Q. And you have shown each year what?

A. What the rainfall was each month.

Q. How rapidly does that rainfall reflect in Burro Creek, Mr. Deacon? [310]

A. That depends on the rain we have had previously.

Q. Then the rainfall in July, it has a great deal that has come out there at one time to form that flash flood that you testified to?

A. Well, in July you will notice we had a rain for three days without any particular raise in the creek, then we had .41 and then we had a flash flood.

Q. And no rain in November at all?

A. No, sir.

Q. Now, you observed the water in the streams, you say, of Boulder Creek, Copper Creek, and other creeks? A. Yes, sir.

Q. And how far, what area do you observe, Mr. Deacon?

A. Well, just to the point of the Santa Maria, we gauge at the bridge; at Boulder, at the Hillside Mine, and one at the Boulder Dam, that is seven miles from Bagdad.

(Testimony of Walter David Deacon.)

Q. Any water at all comes down the Bonanza Wash?

A. I wouldn't know the Bonanza Wash.

Q. You don't know the Bonanza Wash?

A. No, sir. [311]

Q. You are not familiar with it?

A. No, sir.

Q. You are not familiar where the Bonanza Wash and Burro Creek comes in? A. No, sir.

Q. You have not been near those properties?

A. Yes; I was there with Mr. Bogart. I surveyed the power line.

Q. When?

A. I have forgotten it; it was some time last year.

Q. Did you see Burro Creek at that time?

A. Yes, sir.

Q. Do you recall when that was?

A. No; not the date. I know it was in the summer.

Q. What was the average rainfall for the year—I mean what was the total rainfall for the year '48?

A. 9.22, and 2.58 of that fell in December.

Q. 9 and what? A. 9.22.

Q. 9.22. And 2.58 of that fell in December?

A. Yes, sir.

Q. So that 6.64 was the rainfall for the entire rest of the year? A. Yes, sir. [312]

Q. As compared to 15.09 for normal?

A. Yes, sir.

Mr. Cox: That is all.

(Testimony of Walter David Deacon.)

Redirect Examination

By Mr. Wilmer:

Q. Mr. Deacon, with respect to the reading of the gauge located in the camp at Bagdad?

A. Yes, sir.

Q. Do you know where the headwaters of Burro Creek are formed?

A. I have a general idea.

Q. How far back up in the country does it go?

A. Well, I would not want to answer that because I really don't know. I know just the general location of around Camp Woods and that area.

Q. It does rise back up in Camp Woods, in that country back in there?

A. Yes; it does.

Mr. Wilmer: That is all.

(The witness was excused.) [313]

EDGAR A. SCHOLZ

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. State your name, please.

A. Edgar A. Scholz.

Q. What is your occupation?

A. I am Superintendent of the Hillside Mining & Milling Company.

Q. How long have you held that position?

A. Since the latter part of June, '48.



(Testimony of Edgar A. Scholz.)

Q. Prior to that what were you doing, Mr. Scholz?

A. I was General Manager of the Red Gulch Mining Company at Zortman, Montana.

Q. What were you doing prior to that?

A. Prior to that I was engaged as geologist and engineer in charge of exploration for the Martin Zortman, Incorporated, at the Golden Sunlight Mine at Whitehall, Montana.

Q. How long were you there?

A. I was there from September, '45, the latter part of September, '45, to May, 1946.

Q. Prior to that what did you do? [314]

A. I was geologist for the United States Geological Survey.

Q. How long were you there?

A. I started in that work in September 15th, 1942.

Q. Preliminary to being with them, had you had some special training, Mr. Scholz?

A. Well, before that I<sup>e</sup> was about a year and a half, I was geologist for the Fisher Production Company at Cutbank, Montana. Prior to that I spent four years as engineering student at the Montana School of Mines at Butte, Montana, and graduated with a degree of Geological Engineer in '41.

Q. Now, in the present operation at Hillside, how many men do you have employed? A. 55.

Q. And that is what type of a mining operation?

A. Well, that is a narrow vein mine that we

(Testimony of Edgar A. Scholz.)

have, recovering lead and zinc, gold, silver values by flotation.

Q. In '44, Mr. Scholz, did you have occasion to visit the properties of Mr. Zannaras?

A. Yes, we did. I visited the property in the company of Mr. Anderson, C. A. Anderson, of [315] the United States Geological Survey, who is still stationed in Prescott, Arizona.

Q. What was the purpose of that visit?

A. Well, there was a dual purpose. One was to generally familiarize ourselves with the mining possibilities of the area, and the second was, as required by the Government for war effort, we were to determine the amount of any type of mineral in the general vicinity of where we were working, the amount that might be available and there was tungsten possibilities at Mr. Zannaras' place, and that was one of our reasons for being there.

Q. And what did your inspection consist of at that time?

A. Well, it was a very brief visit to just get a general idea of what the possibilities might be in the area.

Q. With respect to his properties, what did you inspect?

A. Well, we looked over that open cut development that Mr. Zannaras told us about and he explained some of the—what he had found there, and also there was a shaft started, and Mr. Zannaras was very interested in the shaft, he thought he had

(Testimony of Edgar A. Scholz.)

some ore there, and the shaft was down about [316] ten feet at that time.

Q. Now, was the mill set up?

A. I could not—I didn't visit Mr. Zannaras' millsite personally, but Mr. Anderson did go down there where the mill was set up, according to his statement.

Q. Have you been back to the property later, Mr. Scholz?

A. Yes; on February 24th I spent the day visiting with Mr. Zannaras, and on February 27th I was there also both at the mine and at the mill.

Q. Did you go to the open cut also?

A. Yes, sir.

Q. What year?           A. '48—'49, February.

Q. With respect to the condition or the situation existing at the open cut, did you observe any change there between its condition when you saw it in '44 and its present condition?

A. It was substantially in the same condition as it was in '44. Any work that had been done there would have been relatively a small amount. I could notice no real change.

Q. Just what does that open cut consist of, Mr. Scholz?

A. Well, it is a horizontal floor, more or [317] less a horizontal bottom cut into the side of the hill, and as the rock is taken out you move farther back in the hill, and it gets deeper or higher to the face of it and I would say—well, it is irregular shaped. It might be extended into the hill as far as 25—20

(Testimony of Edgar A. Scholz.)

to 25 feet vertically, and the height, from the level, the bottom of it to the top, of 15 or 18 feet, 15 feet, something like that.

Q. How abrupt is the rise of the hill?

A. Oh, 10 or 15 degree slope. It is not especially a steep hill.

Q. From your inspection of the area in '44 and your recent two inspections, or, I believe you did not go to the open cut the last time you were there?

A. Yes; I stopped there just briefly to look around to see if it was thought to be beneficial on a basis of the RFC report, to which we had access. It was thought to be a very, or quite a promising point there, or had some interest anyway, and so I stopped by there this time to see if there had been any more work done. There had not.

Q. From your experience, Mr. Scholz, the work you had done, both from the standpoint of [318] your geology, training as a geologist, and your work in practical mining operations, in your opinion would it be possible to estimate the possibilities of that body of ore as to the possible recovery from it and the possible amount of ore, the mineable value there?

A. Well, in normal mining practice you can assume a very small tonnage very closely associated to the workings and out-crops. There might be a small tonnage relatively, reasonably well assured. Now, I have never spent enough time on the property or exhausted enough, or sampled enough to know how pervasive the shelite is.



(Testimony of Edgar A. Scholz.)

Q. Let me ask you this, Mr. Scholz: Based on the ore exposed in this open cut, would it be possible, without further exploration, such as diamond drilling, or further exposure of the ore surface, ore bearing surface, to reach a conclusion as to whether or not the mine had practical possibilities as an economical mining venture?

A. It would be very problematical to say that it had sufficient ore. I think that is what you are getting at. It has no ore blocked out to warrant any large expenditure on equipment of any kind, particularly milling equipment.

Q. With respect to the shaft which you [319] observed, I believe you looked at that again?

A. Yes, sir.

Q. And did you this last time make an inspection of the mill involved?      A. Yes; I did.

Q. When did you do that?

A. On February 24th, 1949. I was there again on the 27th of February, 1949.

Q. Was Mr. Zannaras there on the 24th?

A. He was at the mine at that time and we—I had never been to the mill, and we talked a little bit about it, and he said I ought to go down and see that mill, so I was over there also to see the Pinafore Mine, I had time left, so I went on down.

Q. In your opinion, Mr. Scholz, as the mill is presently set up, is it acceptable as an economical operation?      A. No; it is not.

Q. Why not?

A. Because it lacks some of the things that



(Testimony of Edgar A. Scholz.)

would be needed for economical operation. One of the most important things that it lacks is a classifier, means of getting the controlled size of material to the gravity concentration section, and without that, the capacity would be [320] considerably reduced, and the manpower required would be excessive. The mill as set up has a small ball mill which handles an inch and a half to four-inch material, we will say, minus four inch, and even considering the lesser sizes of the material going into that mill, it would be impossible to grind more than 10 to 20 tons per 24-hour day. It would be a very difficult proposition.

Q. As it is presently set up, in your opinion, using, I believe Mr. Zannaras testified to using three and one half to four-inch mesh size at the head, as it is presently set up for operating, in your opinion, how much ore could be put through that in a day?

A. Between—from 10 to 20 tons, definitely no more than 20 tons on a 24-hour day.

Q. 20 tons in a 24-hour day?

A. 24-hour basis.

Q. Did you observe the tailings at the millsite, Mr. Scholz?

A. Yes; I had noticed a very small amount.

Q. Are you able to estimate the amount of tailings there?

A. There was—well, about, a very small amount, less than a ton.

Q. Now, with respect to the use of water in [321]

(Testimony of Edgar A. Scholz.)

mining, Mr. Scholz, do you use water at Hillside for wetting down the ore?

A. We do on occasions in a few places.

Q. And in connection with the operation of jackhammers? A. Yes, sir.

Q. The operation of the jackhammer in material that is difficult to work on, what is the maximum amount of water that would be used in any given period, eight-hour shift?

A. Not more than 50 gallons at the maximum.

Q. And with respect to the use of water for wetting down ore, is there any general rule with respect to it percentage-wise that is used?

A. No rule as to percentage, because miners don't know things by percentages, but wet the ore down enough to lay the dust, and from experience I know that would be—if you put one per cent water in it, the water added one per cent to it, it would be very, very wet, added water above—use it normally as in wetting down.

Q. Is it customary, Mr. Scholz, to wet broken ore at the bottom of a shaft?

A. Normally, it is not necessary because in drilling—the drilling water quite often is sufficient to wet the ore. [322]

Q. From your experience, Mr. Scholz, could you state whether there is ore or ore bearing faces exposed at the shaft there on the surface or in the shaft sufficient to permit an experienced miner to reach a conclusion as to the amount of ore body present especially susceptible to economic mining?

(Testimony of Edgar A. Scholz.)

Mr. Cox: Pardon me. Would you read that to me, please?

(The question was read by the reporter.)

Mr. Wilmer: Strike that.

Q. Will you state, Mr. Scholz, whether or not there is, either on the surface or in the shaft, sufficient ore exposed; that is, mineral bearing ore exposed sufficient to permit an experienced miner to reach a conclusion as to the amount of ore body present?

A. I am not in a position to state that there is or is not, or are the quantities of ore at the shaft. The amount of work done at the shaft is still quite limited. It is approximately estimated 40 to 45 feet deep, and with no workings off the shaft at all, so that speaking, without committing myself as to whether or not there is ore present, the amount of work done and the exposures on the surface are quite limited for the [323] purpose of blocking out any quantities sufficient for milling even in a small way.

Q. To determine how much ore is actually present, what, if anything, needs to be done?

A. I believe that some underground development work is needed, I believe that trenching and sampling of the surface to more definitely establish a body of ore, or prove that there was not a body of mineable ore.

Q. Until a mine, that is, a new mine is actually developed to the point where ore is blocked out and

(Testimony of Edgar A. Scholz.)

there is actual experience on the cost of mining, and the cost of milling, and so on, is it possible to express an authoritative opinion as to what it will cost to mine a given ore?

A. Yes; you can arrive, if you have the general dimensions of either the ore body or a block of ore sufficiently large to get a certain geometry or the shape of it, it is possible to arrive at a figure that will be within reason.

Q. That is as to the cost of mining?

A. As to the cost of mining.

Q. That is, if you know the texture and the type of the ore and the ore body present?

A. That is right. [324]

Q. Is it true or is it possible to take some section, as Mr. Zannaras has there, and form a reasonable estimate as to what it would cost to operate that mill in its present condition?

A. Yes; that is possible.

Q. How would you do that?

A. In a very general way. Well, if the mill were in condition to operate, a few days' operation would tell that better than any other way that you can have. Of course, it would be based upon—you would have to base it on, if his estimate were made before the mill was operated, it would have to be on the capacity of the machinery and the manpower needed.

Q. What I mean is this, Mr. Scholz: Until the mill was actually set up and put in operation where



(Testimony of Edgar A. Scholz.)

the bugs are discovered and everything was required, is it possible to——

A. Yes; following accepted procedure with test work prior——

Q. No. I am not referring to test work. I am saying without any test work and without the mill having run, and without knowing what it will take to make it run, is it possible to say what it will cost to operate?

A. Not with any degree of accuracy. [325]

Mr. Wilmer: Cross-examine.

The Court: We will have our recess for the afternoon.

(Thereupon, a short recess was taken after which proceedings resumed as follows.)

### Cross-Examination

By Mr. Cox:

Q. You were at the Zannaras property in '44?

A. To the best of my recollection, that is correct.

Q. And you visited the property with whom?

A. C. A. Anderson.

Q. And who is C. A. Anderson?

A. He is the principal geologist of the United States Geological Survey at the present time. He was at that time also.

Q. And did he visit the property to make a report, do you know?

A. No—yes and no; not to make an official report of the property, but in general terms, evaluate the mineral potential of the property regardless of



(Testimony of Edgar A. Scholz.)

the cost of extraction and there might be a source of tungsten.

Q. He was there to make a report?

A. Yes. [326]

Q. And you said, according to the RFC report, there seemed to be a very promising proposition there?

A. That was the most promising, one of the most promising areas, spots in the area.

Q. That was one of the most promising spots in the area? A. Yes.

Q. What do you mean by "in the area"?

A. That anyone knew of, that anyone had any reports on in that part of the, well, say, well that general area of ten square miles—twenty square miles, something like that.

Q. Wasn't that a report of the U. S. Geological Survey, rather than the RFC report?

A. I believe I stated that our ideas regarding the grade were based upon some assays taken from an RFC report by Bill Gohring and Maitland, or the RFC—Reconstruction Finance Corporation.

Q. They took samples there?

A. Yes, they took samples there and had Mr. Zannaras take some under their supervision.

Q. Do you know that they took samples?

A. I have had access to their report and their samples. They have assays in there showing what they took and Mr. Zannaras took with them. [327]

Q. You say you have access to that through what?

(Testimony of Edgar A. Scholz.)

A. Government agencies at the time. I had access to it at the time I was with the United States Geological Survey and at the time we visited the property then.

Q. Was there a U. S. Geological Survey report, you know?

A. There was a visit made by, I believe it was Dr. Krauskopf, and he was—Krauskopf was a geologist assigned to looking for tungsten for the war effort. That is one of the services of the U. S. Geological Survey. That was in, I don't recall at what time before that was or had been, but it was prior to our visit.

Q. And do you know how long he spent there?

A. No, he spent at least one night there. He went out one evening, at least he was out and cruised the ground with Mr. Zannaras with an ultra violet lamp.

Q. That is called a mineralite?

A. Yes—well, it may or may not be. That is one brand.

Q. Can you determine—can you tell with that light if there is tungsten?

A. You can't determine if there is tungsten [328] unless it is the type that fluoresces, shelite in this particular case.

Q. That is the particular type of ore he has?

A. Yes, that is it, supposed to be.

Q. How much time did you spend on the property, Mr. Scholz—well, in '44, how long were you there?

A. We were there a part of one day. I don't re-

(Testimony of Edgar A. Scholz.)

call. We didn't spend a great deal of time. We looked at the general set-up and the area and—on the basis of the RFC examination of grade, possible grade, made a general evaluation of the availability of tungsten for the war effort. I was approximately four or five hours in that area on the property or around it.

Q. On February 24th, how long were you there?

A. On the 24th I came—arrived at the mine about 10:30 in the morning and left to the shaft and went down the shaft with Mr. Zannaras and looked at the picking belt and small crusher he had there, and the general set up, and went out over the hills there which Mr. Zannaras was showing us he thought were promising areas and some of the potentialities of the property, and we left, parted company and left that part of the property about—I didn't check the time. [329]

Q. But during the daytime? A. Yes.

Q. And you were there during the day on the 27th? A. Yes.

Q. Had you ever been on the property at night?

A. No, I have not.

Q. Can you, with the ultra violet light or mineralite, can you make any better determination of what tungsten ore or shelite is there, quantities of shelite available at night than you can in the daytime? A. Yes, sir.

Q. Did you talk to Mr. Zannaras about coming down there at night?

(Testimony of Edgar A. Scholz.)

A. I would like—I told him I would like to see the property some time at night.

Q. And did he tell you it would be all right with him? A. I believe he did.

Q. The fact is, he was anxious for you to look it over at night, wasn't he?

A. I think so. That was my impression.

Q. That was your impression, and the purpose for coming at night was so that you could determine the extent of the shelite over that area? [330]

A. Over an area, I think that was his idea.

Q. And you were anxious to see that also?

A. Yes, sir.

Q. And an examination at night like that would be quite revealing one way or the other, wouldn't it?

A. Well, let's say it would have contributed information as to areas to do some work in.

Q. And it would contribute information—it might contribute information as to possible or even probable extent of the ore, might it not?

A. In a general way, yes.

Q. And without that information it would be impossible to base an opinion, as a geologist, as to much of anything, isn't that correct?

A. Well, the shelite occurrences occur in a state of metaphoric schists and hornblende and Yavapai schist series, and you can follow that general trend of the favorable—what Mr. Zannaras has pointed out is a favorable zone in the daytime probably better than you can follow at night as far as general appearance is concerned. At night if you use an



(Testimony of Edgar A. Scholz.)

ultra violet light you would not follow much of anything unless, if you hit the area that didn't show shelite.

Q. But you can tell in those areas that you [331] had picked out in the daytime, you could tell a little more about it?

A. I would say it would give you some indication.

Q. Could you tell in the daytime in the vein in the bottom of the shaft anything about the shelite it contained?

A. No. We were—I saw no good—no piece of ore showing an appreciable amount of shelite. Mr. Zannaras and I tried, tried to pick up some pieces that were typical of the better stuff and we didn't have—well, we didn't find anything that we thought was especially good, but that happens in places, of course. I made no attempt on this examination—I made no attempt to determine whether there was ore on the property.

Q. But from the report that you had seen, the Government report you had seen——

A. Coupled with the geology of the area.

Q. The area, you thought that this was a very promising proposition?

A. Had sufficient promise to warrant further exploration.

Q. At the mill at Hillside, what mesh are you running there?

A. What mesh? [332]

Q. Yes.

A. At which we are making flotation recovery?

Q. Yes.



(Testimony of Edgar A. Scholz.)

A. At the flotation recovery it is about—I don't have any exact figures to bring to mind, but approximately minus 48 to 60 mesh.

Q. How many tons do you mill?

A. In grinding to that fineness, the feed that we feed to the whole mill, which is the main grinding—actually, it is the only grinding machine we have, feeding is very important——

Q. No, how many tons do you grind, how many comes out of your mill?

A. With half inch feed of Hillside ore, or minus a half inch going through a half inch screen going through the ball mill on Hillside ore, we grind up to 125 tons—125 tons in 24 hours.

Q. What would your tonnage increase if you had 10 mesh?

A. I don't know on that particular ore, but I suppose it would be in the range of 10, 12, 15 per cent—10 per cent—15 per cent.

Q. You are grinding now four times smaller than 10 mesh, four to six times smaller than 10 mesh?      A. Yes, sir. [333]

Q. And if you grind to 10 mesh you think it would increase the mill capacity only 10 to 15 per cent?

A. Well, that is because of the peculiarities of ball mills.

Q. I don't know anything about that.

A. Any operator who has been in the business very long usually, and especially around flotation plants, have a lot of trouble with smalls, or quite fre-

(Testimony of Edgar A. Scholz.)

quently have trouble with smalls. You do your best not to grind that fine and, oh, as much as 50 per cent of your ore would be ground a lot finer than you have any intention or have had to grind it in order to liberate the mineral particles, and because of that control and lack of efficiency, you might say, of a ball mill, you are going to get a large portion finer regardless of what you do, so that would not be the ratio according to the diameters of what it might seem to be.

Q. At Mr. Zannaras' place the ore does go through a crusher?           A. Yes.

Q. And then it is fed into the mill?

A. Yes.

Q. It comes from the mill through a 10 [334] mesh screen?

A. I think it is approximately 10 mesh, I don't recall.

Q. Did you check the machine on the ground or check how it was retained, into the ball mill, how the ore was held in there?

A. This was a sort of a little circular screen, a trommel screen that I didn't check the exact machine. I mean just from general appearance it was about that size.

Q. And would not the mesh on that screen make a difference in the capacity of the mill?

A. Yes, it certainly would. There would be a factor there, that the rejects from that screen would have to be carried to the other end of the ball mill by manpower or by manual labor.

(Testimony of Edgar A. Scholz.)

Q. Isn't that so set that it can't come out of the ball mill until it is 10 mesh, isn't it so arranged until it goes through that 10 mesh?

A. No, course rock particles go out and go on the floor.

Q. Have you seen that mill in operation?

A. No, sir; I'd like to, though, some time.

Q. Isn't the rock that was on the floor rock that was cleaned out of the ball mill after it was stopped, when they stopped operations? [335]

A. Well, the way this screen is set up there, any particles getting out there could not go through, it would have to be disposed of in some fashion or another. It is not designed to go back into the mill that way.

Q. Now, you were testifying about the water use at Hillside. Your mine out there has water in it, hasn't it; don't you have to pump water out of your mine?      A. Yes.

Q. And the ore is wet there?

A. The ore is wet there on all of the lower levels, but we have upper stopes on the old 300 level which is bone dry.

Q. Now, how many tons of ore—when did you set up your mill there at Hillside?

A. I'd say it was set up before my arrival, considerably. I guess it was in condition to operate in the latter part of '47.

Q. And you weren't there at the time?

A. No, sir.

Q. And how much ore are you running through your mill now?

(Testimony of Edgar A. Scholz.)

A. At the present time we are operating on a two-shift basis, about—just about a hundred dry tons, or 95—90 to 100 dry tons. [336]

Q. Is that ore from the Hillside Mine?

A. Yes, sir.

Q. When did you start operating?

A. We have operated—the Hillside Mine was not rehabilitated sufficiently to supply the mill to full capacity, so that in the time that we weren't able to mill or have ore to mill from the Hillside Mine, we milled custom ore from the—mainly from the old Dick and Copper King Mines from the Goodwin Mining Company.

Q. Where are those mining properties, Mr. Scholz?

A. There are two mills there at Bagdad in the general direction of the Zannaras property. The Copper King is about a mile and a half airline south of Bagdad, about 11 or 10 miles from Bagdad by road.

Q. And how much custom milling do you do?

A. Approximately 8,000 tons.

Q. And when was that?

Mr. Wilmer: May it please the Court, I object to this line of questioning. It is not material.

The Court: I don't see that it would be in this case.

Mr. Cox: I expect to develop something [337] else.

The Court: Yes, I know, but I don't care for any more.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

ERNEST GEORGE GREEN

was called as a witness on behalf of the defendant, and, being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. What is your name, please?

A. Ernest George Green.

Q. Where do you live?

A. Bagdad, Arizona.

Q. What is your business?

A. I work for the Bagdad Copper Company as mill superintendent and I am manager of the Goodwin Mining Company.

Q. Have you any other mining interests?

A. We are operating four mines in the Goodwin Mining Company and aside from that I have, oh, just a few claims, don't amount to much, nothing active.

Q. The Goodwin Mining Company is [338] operating four mining properties?

A. Yes, sir.

Q. And you manage them?

A. Yes, sir.

Q. And you are mill superintendent for Bagdad?

A. Yes, sir.

Q. How long have you been in the Mining business, George?

A. 15 years.

Q. And what has been your experience in that business; I mean what have you done?



(Testimony of Ernest George Green.)

A. I have been mill superintendent at Bagdad on that job four years. For a short time previous to becoming mill superintendent there I was in test work at Bagdad, and about three and a half—no, about five months through the summer of '44, I was not working for Bagdad, I was operating mining properties there that are in the neighborhood of the Goodwin Mining Company.

Q. That is the Pinafore?

A. Yes, the Pinafore, old Dick Mine, and the Copper Queen, and the years '42 and '43 and up to May 15, '44, I worked as assayer and chief chemist at Bagdad. Prior to coming to Bagdad, the first of '42, I worked one year, the year '41, as chief chemist for the Eagle Shawnee Mine in California. [339] In '30—In the years of '38, '39 and '40, I was operating the Rubicon Mining Company at Ruby, Arizona, my own mines. In '37, I was chief chemist of the 79 Lead-Copper Company at Hayden Junction, Arizona. In '34, '35 and '36, I was assayer and chemist for the Montana Mines at Ruby, Arizona. During the seven years I have been in Bagdad, I have always had some outside mines operating and managing, operating mines.

Q. During the time in 1944 that you were not working for Bagdad, you were operating the Pinafore and some of these other mines?

A. Yes, sir:

Q. Where are they with respect to Burro Creek?

A. The Pinafore Mine is seven miles from Burro Creek on the old Kingman Road.

(Testimony of Ernest George Green.)

Q. Did you have occasion in '44 to go to Burro Creek quite often below Kingman Crossing?

A. Yes, we went down, oh, we went down two or three times every week in the evenings to go fishing.

Q. That lies below Kingman Crossing and above the Zannaras property, is that right? A. Yes.

Q. During that entire summer did you fish in the water there? [340] A. Yes, sir.

Q. What did you catch? A. Catfish.

Q. Were the fish such that you ate them?

A. They were very good.

Q. And would you go swimming?

A. We—no, we didn't go swimming. The gnats are very bad out there in the hot weather.

Q. George, I believe you went with Mr. Dickey to the Zannaras property in July 27th, of this year?

A. Let's see, '48.

Q. I mean '48. A. Yes, sir.

Q. Were you there at the time that these several snapshots were taken by Mr. Dickey?

A. I was.

Q. And did you observe, George, whether or not the water on Burro Creek was running in Burro Creek at that point?

A. You mean at the mouth of Bonanza Wash?

Q. Yes. A. Yes, it was running.

Q. Do you recall to what extent?

A. Well, yes, there wasn't very much water there on the surface. I didn't go any distance, any great distance up or down the creek; in fact, [341] I didn't go up the creek at all. I just went down there when

(Testimony of Ernest George Green.)

Mr. Dickey took those pictures and there was a little water running in and out of Mr. Zannaras' sump.

Q. Did you go on down the creek any?

A. Oh, only 150 feet, just around this big pool.

Q. Did you form any estimate, George, as to the amount of water that was available there at that time?

A. Do you mean in the flow or in the pool?

Q. Well, I mean for practical mining—that a practical mining person would have to have available for use for his mill.

A. I noticed there was quite a volume of water there in the big pool and I made an effort to try to get a close estimate of what water there was there then, and my conclusion, I didn't measure the distance, I had to estimate the distance and the depth, my conclusion was there was about 90,000 gallons in that pool.

Q. With respect to making water available for mining, George, what is the customary procedure with respect to making provision for diversion and for a sump?

A. Well, a sump should, of course, be put [342] in in such a way that it would not constantly be filling up with sand and little rocks that the current carries along, and a sump should be of sufficient size so it will act as a sort of reservoir, and it depends on the amount you want to pump, of course, how big the sump should be. In any creek like that where a good part of the year there is a surface flow

(Testimony of Ernest George Green.)

and then an underground flow and it would flow through gravel and sand, the sump should be of pretty good size, so you would need quite a reservoir, depending on how much water you should need.

Q. Do you believe, in your opinion, George, it would have been difficult to put in a sump there to make that water available for use by the mill?

A. No, sir; not difficult.

Q. Have you had occasion during the summer of '48 to cross Kingman Crossing, George?

A. No, sir; I had not.

Q. Now, going on rapidly, George, with respect to the matter of use of water in mining, with respect to using it to wet ore, what does good mining practice require with respect to the quantity of water?

A. Used to wet ore? [343]

Q. Yes, dust.

A. Well, by far, in the majority of cases the ore does not require any wetting beyond the water that is discharged from the drilling machines. Of course, it is a part of the mining code and the State Law that we have to drill wet, we can't drill with dry machines either, and there is usually enough water there to dampen the dust. Ore naturally has a little moisture, and besides, the ore will probably analyze from one and one-half to two per cent moisture, which is not enough to keep the dust down, yet, when you add one or two per cent to that, the ore is noticeably wet and muddy.

Q. Is it a handicap in mining or milling if the ore is muddy and wet?



(Testimony of Ernest George Green.)

A. Yes, it is, through the main crushers, it is quite a handicap.

Q. Now, George, with respect to the amount of water you use in connection with the jackhammer, do you have any personal—I mean are you using water in connection with the operation of these various mines?

A. Yes, we do, and we, of course, have quite accurate measurements on the amount of water that we need to use in these machines, because these [344] small mines I have been operating there, we have to haul the water in there, and when we have to haul the water, we want to be pretty certain there isn't any going out to waste.

Q. How about in any one of those many mines, do you have any actual measurements as to the amount of water per ton of ore produced?

A. At the Pinafore Mine we produce 10 tons a day. Those 10 tons are broken through and we work one jackhammer to several machines, and we average 20 gallons of water.

Q. 20 gallons of water is all that is required?

A. Yes.

Q. Now, with respect, George, to the mill in question here, you looked at it, I believe?

A. Yes, sir.

Q. You looked at the setup to pump the water that was there?

A. Yes, sir.

Q. With respect to the arrangement of that sump and the entire setup, is it, in your opinion, a practical setup for operation in mining and milling tungsten ore?



(Testimony of Ernest George Green.)

Mr. Cox: I object, he has not qualified himself as a milling expert at all. [345]

Mr. Wilmer: You are the superintendent of the mill at Bagdad? A. Yes, sir.

Q. How many men do you have under you there?

A. I have about 40 in that mill.

Mr. Cox: A question on voir dire.

Q. Have you operated a small mill, Mr. Green?

A. Yes, sir.

Q. How many years?

A. I have operated around about a total of five years.

Q. Have you ever constructed a mill?

A. No, personally or alone.

Q. Have you ever designed a mill?

A. I have never designed one that has actually been put up.

Q. Do you have any knowledge of designing of a mill or what goes into a mill?

A. I operated mills that operated quite successfully and that operated at a profit. They operated continuously 24 hours a day. I have been paid pretty good salaries for that. While I didn't design them, I am quite familiar with them so that I know what it takes to make a mill operate.

Q. And you have had about five years' [346] experience with those mills? A. Yes, sir.

Q. And how many different mills in that five years? A. Three.

Q. And from your knowledge of just with those three mills operating you feel that you are qualified

(Testimony of Ernest George Green.)

to give an opinion on what other mills will or will not operate?      A. I do.

Mr. Wilmer: Will you read the last question I asked the witness?

(The question reading: "With respect to the arrangement of that sump and the entire setup, is it, in your opinion, a practical setup for the operation in mining and milling tungsten ore" was read by the reporter.)

A. Are you including the mill or the sump alone?

Q. (By Mr. Wilmer): Well, take them separate, the sump first and then the mill.

A. Of course, you have been referring to this as a sump, but it is really not very much of a sump. It is just really a little depression between a couple of boulders and it is not one per cent the size of the body of water immediately [347] adjacent to it, and I don't think that it is practical to set up a pump where you have no reservoir or no chance of water settling at all.

Q. All right. Now, with respect to the mill, what was your observation with respect to it?

A. I would not want the job——

Mr. Cox: We renew our objection on the mill, if the Court please, no qualifications shown to testify as to his opinion on the mill.

Mr. Wilmer: I don't think it is important. George, I am going to show you Defendant's A for identification, on which you were here and heard Mr. Jacobs testify with reference to. Did you cut the samples, George, that were sent to Mr. Jacobs?

(Testimony of Ernest George Green.)

A. I took the samples.

Q. Where were they taken from?

A. I took one sample in the bottom of the shaft which was around ore, broken loose ore that had been blasted along there. I took a sample across that shaft.

Q. Was it a representative sample?

A. Yes.

Q. How is that marked on there?

A. It is marked here as a sample, bottom of shaft. [348]

Q. All right.

A. I took a sample of the ore that was in the mill bin, the ore was put in there evidently and was ready for milling.

Q. That is at the mill and not at the mine?

A. It was at the mill.

Q. And how was that taken?

A. Well, that was taken just by going across from one corner to the other, just taking it like a little trench across there.

Q. All right.

A. And I took a sample from the concentrator.

Q. That is stuff that had been milled and concentrated? A. Yes.

Q. What was the size approximately of the sample of the ore which you took in different instances? A. About 10 pounds.

Q. And the amount of concentrates?

A. I'd say 6 pounds.

Q. Then what did you do with it?

(Testimony of Ernest George Green.)

A. I took it over to Bagdad and put it through the normal procedure for all samples. We had to dry it, and then in the next order crush it down to a very fine size and then cut it [349] down to a smaller size portion, and then pulverize it and mix it thoroughly.

Q. And that was mailed by you to the assayer at Tucson? A. Yes, sir.

Mr. Wilmer: We offer Defendant's A for identification in evidence.

Mr. Cox: Voir dire. The assayer testified there was about a half cupful of each of those samples sent to him.

A. Yes, sir.

Q. Is that how much you sent them?

A. No, I just said I dried them, crushed the rock very fine and then cut the samples down to smaller sizes and then pulverized it and mixed it thoroughly. The samples that we sent to him was, oh, possibly six ounces out of six to ten pounds at the start.

Q. Did you check the sample at all yourself?

A. Did I?

Q. Did you check it at all?

A. Assay it?

Q. Yes. A. No, I did not.

Q. Did you look at it at all?

A. I looked at it. [350]

Q. Did you look at it under a mineralite?

A. I don't remember for sure.

Q. You have a mineralite there, don't you?

(Testimony of Ernest George Green.)

A. Yes.

Q. You normally send to an assayer samples of a few ounces like that?

A. Yes, we do. That is the way I have been doing in every case, in every instance if I was sending a sample out. I would cut it down to a six ounce size. There are envelopes called mailing envelopes especially used for that purpose.

Q. In sampling did you measure that square across, or did you square it out?

A. It depends on how well the material mixes and how finely it is broken before you sample.

Q. But you didn't check this material over with a mineralite, did you?      A. No, sir.

Q. Where was Mr. Zannaras when you took these pictures?

A. These pictures that were taken July 22nd, of last year?

Q. Yes.

A. There was a lady at the cabin at the mine that said Mr. Zannaras was gone to town. That is [351] all I know about that.

Q. Did you ask her about running the pump to see how it would run?      A. No.

Q. They have always been co-operative there at the Zannaras property, have they?

A. Not according to hearsay around the neighborhood.

Q. Well, any time you have been there did you have any trouble?      A. No, I never had.



(Testimony of Ernest George Green.)

Q. Did you get wet that day; did you fall in or get yourself wet that day in taking those pictures?

A. No.

Q. Mr. Dickey testified that you were standing here in the stream.

A. Yes. I was not standing in the water. I was standing on a stone or something, because I don't remember getting my feet wet. I don't think I did.

Q. Where you were standing, that was the only stream of water flowing there, the stream of water across the bed of the creek at that point?

A. The water comes down through here. I think that is where the water was. [352]

Q. Where you were standing, though?

A. That was the diversion point.

Q. That is the only water that was across the bed right at that point?

A. Yes, but right across the water—

Q. You don't know how long it would have taken to pump out the natural sump that he had there?

A. No.

Q. From your observation of that would you say that—the testimony that the pump would run 45 minutes, run about 45 minutes and went dry, would be reasonable?

A. I don't think I would express an opinion on that, because I don't know enough about that pump; I have never run it; I have never seen it run.

Q. Well, assuming that it runs 40 gallons a minute.

A. Well, you can't hardly estimate that without

(Testimony of Ernest George Green.)

assuming something else. If the pump pumps 40 gallons a minute, it has to be put in a place where it would pick up water very well.

Q. Would that pick up all the water around there as you saw it in approximately 45 minutes or less? [353]

A. In the place where I was it would suck the pump dry.

Q. It would suck the pump dry?

A. Yes, it wouldn't get any more water.

Mr. Cox: That is all.

Mr. Wilmer: That is all.

(The witness was excused.)

Mr. Wilmer: There was an offer on Defendant's A for identification, and there was voir dire examination, and didn't renew the offer.

Mr. Cox: I don't recall Mr. Jacobs ever testifying as to the amount of return he found in the samples.

Mr. Wilmer: It shows right on the face of it what his return is. That is the assay he made and that is the return he made. I don't know how much more he can do.

Mr. Cox: My memory was it was not tied in with the exhibit.

The Court: Did he identify that?

Mr. Cox: He did identify the document.

The Court: That is where it came from?

Mr. Wilmer: I produced him and asked him if it was the assay he made, if the Court please.

The Court: It may be received.

(Thereupon the document was received [354] as Defendant's Exhibit A in evidence.)

C. H. W. SMITH

was called as a witness on behalf of the defendant, and being first duly sworn, testified as follows:

Direct Examination

By Mr. Wilmer:

Q. What is your name?

A. C. H. W. Smith.

Q. You are connected with the office of the Arizona Water Commissioner?

A. I am the engineer of the Water Division.

Q. Do you have in your custody the original records of the Water Commissioner's office with respect to the application of the Bagdad Copper Corporation to appropriate 315 million odd acres of water, filed in '41?

A. Gallons?

Q. Gallons per year. A. I have.

Q. Would you produce it, please?

(The witness produces a document and presents it to Mr. Wilmer.)

Q. (By Mr. Wilmer): Referring, Mr. Smith, to the Certificate of Water Right which I am taking out [355] of that folder, is that the original record of your office with respect to that particular water right?

A. Yes, sir.

(Testimony of C. H. W. Smith.)

Mr. Wilmer: Now, may it please the Court, I assume counsel is familiar with this.

Mr. Cox: Yes, I have a certified copy.

Mr. Wilmer: I have mine in the office, I forgot to bring it.

Mr. Cox: Don't you have one in this file?

Mr. Wilmer: No. If it is agreeable with counsel, since they are familiar with this and Mr. Smith would like to keep his records intact, if possible, I wonder if we might stipulate that a certified copy of this Certificate of Water Right may be substituted for this?

Mr. Cox: Yes.

Mr. Wilmer: At this time, if it please the Court, we offer in evidence from the records of the Land Commissioner of the State of Arizona, dated April 12th, 1944, Certificate of Water Right, Certificate No. 1314, Page 1314, subject to its materiality, Judge.

Mr. Lockwood: Yes. We want to make an objection for the record that it is immaterial, that it is dated after the appropriation—— [356]

Mr. Cox: Just for the purpose of the record, we wish to make an objection that the water right shown is immaterial, in that it is subsequent to the water right of the plaintiff.

Mr. Wilmer: The certificate, I believe, is for 315,360,000 gallons, and it is dated the 12th of April, 1944, is that correct?

Mr. Cox: That is correct.

(Testimony of C. H. W. Smith.)

Mr. Wilmer: Now, with that understanding, I offer that in evidence.

The Court: All right, it will be received subject to the objection.

(Thereupon the document was received and marked as Defendant's Exhibit L-1 in evidence.)

Mr. Wilmer: Will you serve me with a certified copy of that, Mr. Smith, and I will pay you for it?

The Witness: Yes.

Q. (By Mr. Wilmer): That was initiated by an application filed on what date, Mr. Smith?

A. November 5th, 1941, at 2:30 p.m.

Q. Now, do you have with you the file with respect to a water right issued to J. P. Zannaras?

A. I do.

Mr. Wilmer: Would you produce it, please?

(The witness complies.) [357]

Mr. Wilmer: Referring to this file, I at this time would like to have marked for identification the proof of appropriation of water which appears in the file as Application No. A-2362, Permit No. A-1539, Mohave County, filed in the office of the Water Division of the State Land Department on December 13th, 1944.

Mr. Cox: Is that the previous record to the certificate, Mr. Wilmer?

Mr. Wilmer: I am marking it for identification only at this time. It would not hurt it to put a stamp on that, would it?



(Testimony of C. H. W. Smith.)

The Witness: No.

Mr. Wilmer: And may we have the same stipulation, that subject to its materiality, of course, we will substitute a certified copy for this, and will you provide me with that, Mr. Smith?

A. Yes.

(Thereupon the document was marked as Defendant's Exhibit M for identification.)

Mr. Wilmer: That is all I have from Mr. Smith.

### Cross-Examination

By Mr. Cox:

Q. Mr. Smith, after the application for a permit by the Bagdad Corporation for an appropriation of [358] 315 million, some thousand, gallons of water, did the Bagdad Corporation furnish a certificate of proof of use of water?

Mr. Wilmer: I object to that on the ground it is immaterial, since proof of appropriation is a thing of legal matter.

Mr. Cox: This is not attacking the water right, but merely to show what the Bagdad Corporation said they did use.

Mr. Wilmer: Just a minute, what was the date of that?

Mr. Cox: I will ask you if, under date of March 15th, 1944, the Bagdad Corporation gave a notice of complete application of water to beneficial uses, showing 600,000,000—using 600,000,000 gallons of water per annum?

(Testimony of C. H. W. Smith.)

Mr. Wilmer: I object to that as being immaterial, since that was in '44. We are here concerned with '48.

Mr. Cox: Mr. Dickey testified there has been no material change in the amount of—

Mr. Wilmer: Mr. Dickey didn't testify to any such thing at all. They put in their tailing pond since then.

Mr. Cox: They had some pumps since then, but he said they had some pumps— [359]

Mr. Wilmer: I object on the ground it is immaterial what might appear in the proof of appropriation in 1944.

The Court: It may be received.

Mr. Cox: There was that record furnished to your office by the Bagdad Corporation, was there not?

A. Yes.

Mr. Cox: That is all.

Mr. Wilmer: That is all, Mr. Smith.

(The witness was excused.)

Mr. Wilmer: I call Mr. Zannaras for a couple of additional questions.